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A brief Notice of the Subhāshita Ratna Nidhi of Śāśkyā Pandita, with extracts and translations by the late M. A. CSOMA DE KÖRÖSI.

(Continued from page 165, Vol. XXIV.)

- 86 གཤམ་ཅན་ ལྷན་པར་ ལྷ་པ་ནི།
 འད་ འདྲེད་ ཡིན་ ལྷིས་ ལྷས་ ལྷུར་ མིན།
 སྤྱན་ ལུ་ བསྐྱེན་ ཀས་ མེད་ པ་ནི།
 ལྷས་ དན་ གཏོད་ གིས་ དགའ་ ཀས་ མིན། །
- 87 ན་ཅད་ གཤམ་ལྷུ་ ཆེས་ བྲགས་ ན།
 རྩེ་ ཞིས་ འབྲུཔ་ ལུད་ གམ་པར་ བརྒྱལ།
 གཞིག་ ལྷགས་ བོན་ པའ་ བེད་ ལུདེ།
 ལོ་ གོས་ རྩེས་ མཐུར་ གཞན་ ལྷིས་ བསལ། །
- 88 ལྷག་ ལྷེད་ རྩེ་ལྷུ་ ལྷས་ པ་ དད་།
 ཁད་ པའི་ ཡ་གོས་ ལྷམ་པ་དད་།
 རྩེ་ ཙ་ ལྷིན་ ལུ་ ཞིག་ པ་ ཡིས།
 འུ་ ཀ་ གནས་ ཀམས་ ལྷུན་ ལུ་ ལྷག། །

V. EVIL PRACTICES (ངན་ལྟོས་).

86. When a cunning person speaks fair, it is for his own interest not out of respect for others ; the laughing voice of the night-bird is an ill omen, it proceeds not from joy.

87. If a man grows too famous, on account of his great advancement, though he endures for a while, yet at last he is destroyed. The ass that was covered with the skin of a leopard, after having eaten up one man's standing corn, was slain by another.

88. They that have chosen a wicked man for their king, they that dwell in a house whose upper roof is ruinous, or under a rock whose summit threatens to fall, are in continual fear.

- 89 གལ་ ཇེ་ རྒྱ་པ་ ཡོད་ན་ ཡང་ ।
 སྐྱེ་བའི་ རང་ བཞིན་ ངན་པ་ སྤང་ ।
 རྩམ་ སྐྱུ་ལ་ རྟེན་ སྤུས་ མགོ་ རྩོན་ཡང་ ।
 མཁས་ པ་ སྤྱ་ ཞིག་ ཡང་ རྩ་ རྟེན་ ॥
- 90 རྩམས་ པས་ ཡོན་ ཏན་ ཉམས་ འབྱུང་ཞིང་ ।
 འདོད་ པས་ ངེ་ ཚྲི་ ཉམས་ པར་ཕྱེད་ ।
 གཡོག་ འཁྱོར་ རྩམ་ཏུ་ སྤྱན་ རྒྱུང་ན་ ।
 རྩེ་དཔོན་ ཉམས་ པར་ འབྱུང་ བ་ ཡོན་ ॥
- 91 ཡན་ པར་ སྤྱ་བ་ དཔོན་ པ་ སྤྱེ་ ।
 དེ་དམ་ ལས་ བྱང་ ཉན་ པ་ དཔོན་ ।
 སྤྱན་ པ་ མཁས་ པ་ རྟེན་ དགའ་ སྤྱེ་ ।
 དེ་ ཡི་ ཚྲི་ བཞིན་ ཕྱེད་ པ་ རྒྱུང་ ॥
- 92 མ་ བརྟམས་ པར་ རྟེན་ སྤྱ་ ལ་ ཡང་
 ཡིད་ ཆེས་ པ་ དམ་ བསྐྱེམ་ མི་བྱ་ ।
 བཤ་ ཡམ་ པ་ ལ་ སྤྱོན་ བྱུང་ དང་ ।
 བོས་ བཏུབ་ པ་ ལ་ དབྱུང་ རྒྱུང་ མང་ ॥

89. Though a man is learned, but if he is by nature bad, avoid him. Though a venomous serpent has a gem on his head, what wise man would take him into his bosom ?

90. By arrogance, good qualities are diminished ; by lust modesty is obfuscated. By a continual railing at his servants, the master loses his authority.

91. It is a rare thing to find one who can give good advice, but it is more rare to find one who would listen (to advice)—difficult it is to find an expert physician, few are they that would act according to his advice.

92. Judge not before you have examined. It often happens that an upright man, if he loses his cause, is thought to be a knave. He that acts with discretion, has many enemies.

- 93 དཀ་ པ་ རི་ ལྷུ་ བཅོས་ ལྷུ་ ལྷུ་ །
 འད་ བཞིན་ བཟང་ པོ་ འབྱུང་ མི་ ལྷུ་ །
 ལོ་ལ་ བ་ འབད་ དེ་ བསྐྱུ་ ཀ་ ཡང་ །
 ར་ དོན་ དཀར་ པོ་ མི་ ལྷུ་ དོ་ ॥
- 94 གཞུང་ དཀ་ རོ་ལ་ གཅེས་ འཛིན་པ་ །
 མཛོ་ བཞེས་ ཡིན་ ལྷུ་ ཡིད་མི་ བདྲན་ །
 ཆེན་ པོ་ རྣམས་ ལ་གསུང་ རོས་ན་ །
 གཞིན་ ལྷུ་ བསྐྱུ་ པར་ ལྷུ་ པ་ མང་ ॥
- 95 གནད་ པའི་ མཚན་མ་ རུ་ འབྱིན་ པའི་ །
 དམ་ བོ་ དེ་ དག་ གཞོམ་ པ་ ལྷུ་ །
 ཡན་ པའི་ རྒྱུ་ གཤམ་ རུ་ འབྱིན་ པའི་ །
 དམ་ བོ་ དེ་ དག་ རི་ ལྷུ་ གཞོམ་ ॥
- དཀ་ ལྷུ་ བཅོས་པ་ལྷུ་ 5.
- 96 བདག་ རིད་ དཔོན་ཙ་ བསྐྱུ་ ལྷུ་ན་ །
 དེ་ལི་ ལྷུ་ གསལ་ དཀོན་ །

93. In whatever manner you fashion a bad man, it is impossible to make his nature good—you may wash the coal with all the zeal you will, but it is impossible to give it a white colour.

94. An ill-principled man, who is fond of riches, though he be a friend, is not of a firm mind. There are many that have been destroyed by their own relations, in consequence of their having been bribed by the great.

95. It is easy to overcome those enemies that announce their plans of lusting (or injuring). But how are those to be subdued who advise a salutary retreat?

VI. THE NATURAL WAY OR MANNER (OF MEN'S ACTIONS), (འད་བཞིན་ལྷུ་རྒྱུ་)

96. If one should happen to be chosen for a ruler, it is seldom that he could know what was to be done. We may look on others

གཞན་ ལ་ ལྟ་ བའི་ མིས་ ཡོད་ ཅུང་ །

ཀྱང་ ཉིད་ ལྟ་ན་ མེ་ལོང་ དཔེས ॥

97 ཐུལ་པོ་ ཀྱང་ ཅ་ མང་ མོད་ ཅུང་ །

ཆས་ བཞིན་ སྤྱོད་པ་ སྒྲིན་ ཅ་ ཉུང་ །

མཁའ་ ལ་ ལྟ་ བཞིན་ མང་ ན་ ཡང་ །

འོད་ བསལ་ ཉི་ ཟླ་ ལྟ་བུ་ མེད ॥

98 བད་ ཞིག་ བཞེད་ པར་ ཐེད་ རྩས་པ་ །

དེ་ཡིས་ ཡན་པའང་ ཐེད་ པར་ རྩས་ །

མཐོ་ བོ་ རྩད་པན་ བཅིདས་ པ་ཡི་ །

ཐུལ་པོས་ ཐུལ་ སྤྱད་ སྤྱིན་ པར་ རྩས ॥

99 སྒྲོན་ པོ་ སྒྲོ་ ལྟན་ རང་པོ་ ཡིས་ །

རྩེ་དང་ འབངས་ གྱི་ དོན་ ལྷན་ ལྷལ་ །

མདའ་ ཉི་ མཁས་ པས་ འཕངས་ ལྷུང་ན་

བད་ལ་ བདེས་ པ་ ཡོག་ པ་ ལྟར ॥

100 མང་ པོ་ བཅིག་ ཅ་ སྒྲོ་ མཐུན་ན་ །

རྩྱལས་ རྩང་ སྤྱིས་ ཅུང་ དོན་ ཆེན་ འབྱུང་ །

with our own eyes, but we want a looking-glass, when we wish to view ourselves.

97. Though there be very many kings, yet there are very few of them, that govern with righteousness. Though there is many a body of the gods in *the* heaven, yet there are none so brilliant in light as the sun and moon.

98. He that can do mischief, can do also good. A crowned monarch may bestow on one a whole kingdom.

99. By an upright intelligent minister both the Sovereign and the subjects can be rendered, in all respects, happy. An arrow, when shot by a dexterous man, strikes the mark aimed at.

100. If many consent together, great things may be performed

ཐོག་ ཆགས་ ཐོག་མེ་ རྩིས་ འཕྲུ་ པས །

མེད་ གེའི་ ལུ་ལྷ་ བསང་ རེས་ བས །

101 ལུ་ ལུ་ རྩ་ བ་ དེ་ བའི་ མི །

མཐུ་ རྩལས་ ལྷན་ ཡང་ རྩུ་ པར་ འཕྲུ །

ལྷང་ པོ་ ཤིན་ཏུ་ རྩལས་ ལྷན་ ཡང་ །

ལྷང་ རྩ་ རྩུ་ རྩུ་ བན་ བཞིན་ འཕྲུ །

102 ད་ རྩུ་ རྩུ་ བ་ རྩུ་ རྩུ་ རྩུ །

རྩུ་ པོ་ རྩུ་ རྩུ་ རྩུ་ རྩུ་ རྩུ །

རྩུ་ རྩུ་ རྩུ་ རྩུ་ རྩུ་ རྩུ །

རྩུ་ རྩུ་ རྩུ་ རྩུ་ རྩུ་ རྩུ །

103 རྩུ་ པོ་ ད་ རྩུ་ རྩུ་ རྩུ་ རྩུ །

ད་ པས་ ད་ རྩུ་ རྩུ་ རྩུ །

རྩུ་ རྩུ་ རྩུ་ རྩུ་ རྩུ་ རྩུ །

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104 རྩུ་ པོ་ རྩུ་ རྩུ་ རྩུ་ རྩུ །

མཐུ་ པོ་ རྩུ་ རྩུ་ རྩུ་ རྩུ །

even by little forces. It is said: a lion's whelp was killed by an assembled multitude of ants, (or pismires).

101. He that is indolent and deficient in exertion, though he be strong and robust, shall decay. An elephant, though he be very strong, is treated, by his little driver, as a slave.

102. When haughtiness is carried too far, even great men will be overpowered: though the white tortoise (fish) has only a little body, yet is he the destroyer of a large crocodile.

103. The great have no need to be arrogant; the arrogance of the mean is futile. A gem wants no recommendation; none would be a counterfeit jewel, though it be highly extolled (or praised).

104. Men, commonly, are injured by men of the like kind

ନି'ମରି' ରେ' ବେ' ଗଂ' ସ'କ ।

ରେ' ବେ' ଟକ' କିମ' ସନ୍ନି'ପ' ଉତ୍ତୁ ।

105 ଧକ'ଭି' ଦସ' ସି' ଧି'ଧି' ପଞ୍ଚକ ।

କି'ଦ' ଭି' ନି'ଧି' ଧି'ଧି' ସ୍ଥଳ ।

କି'ମ'କି' କି'ସ' ଧି' ଧି' ନି' ।

ଧି' ପରି' ଉତ୍ତୁ' ଧି' ଧି' ଧି' ॥

106 କି'ଧି' ଧି' ଧି' ଧି' ଧି' ଧି' ।

ଧି' ଧି' ଧି' ଧି' ଧି' ଧି' ।

ଧି' ଧି' ଧି' ଧି' ଧି' ଧି' ।

ଧି' ଧି' ଧି' ଧି' ଧି' ଧି' ॥

107 ଧି' ଧି' ଧି' ଧି' ଧି' ଧି' ।

ଧି' ଧି' ଧି' ଧି' ଧି' ଧି' ।

ଧି' ଧି' ଧି' ଧି' ଧି' ଧି' ।

ଧି' ଧି' ଧି' ଧି' ଧି' ଧି' ॥

(tribe) with themselves. By the appearing of sunshine, all other luminous bodies are offuscated.

105. Keep him from whom you derive advantage, though he is your enemy. Reject him that hurts you, though he be your relation. Buy, at whatever price, a jewel, brought from sea. Drive out by medicine, the disease that is in your inward parts.

106. When a man has some wealth within, he shows it with pride in his externals. When the clouds are full of water, then they move and make a noise.

107. It is rare to find one who is all perfection; but it is rare also to find one who is destitute of every good quality. A wise man will keep him who leans more to virtue than to vice.

111. A foolish man is pleasing, when he speaks but little ; a king is dignified when he keeps secluded ; imposing spectacles are beautiful if viewed at a far distance ; a jewel, if rare, fetches a great price.

112 ཉ་ཅང་ ཐུམས་ པ་ ཆེ་ ཐགས་ན།
 དེ་ ཉིད་ འཁོར་ པའི་ རྒྱ་རྒྱ་ འབྱུང་།
 འཇིག་ རིན་ རྩོད་པ་ ཡལ་ ཆེར་ནི།
 འབྲེལ་བ་ ཉིད་ ལས་ འབྱུང་བ་ མང་ ॥

113 ཉན་ཏུ་ རྩོད་པ་ ཆེན་ པོ་ ཡང་།
 ལྷག་ པར་ མཇོམ་ བའི་ རྒྱུ་ ལྷིད་ དེ།
 རྩོད་པ་ ཐུང་བའི་ མཐུང་ ཡལ་ ཆར།
 འབྲུམ་ པར་ འབྱུང་ བ་ མང་ བར་ མཐོང་ ॥

114 སེར་ ལྷ་ ཅན་ ཐུས་ རྟེན་ རྣམས་ དང་།
 ཐུག་ དོག་ ཅན་ ཐུས་ ཐོགས་ པོ་ དང་།
 སློ་ དན་ ཅན་ ཐུས་ རྒྱུ་ པ་ རྣམས་།
 ཡོད་ བྱང་ དགའ་ བ་ རྒྱུད་ མི་ རྣམས་ ॥

115 བཅུམ་ ཆགས་ ཅན་ རི་ རྟེན་ཐུས་ དགའ་།
 ད་ཐུག་ ཅན་ རི་ བཟློད་ པས་ མཐུ།
 རྒྱུན་ པོ་ རང་ དང་ མཐུན་ པས་ དགའ་།
 དམ་ པ་ བདེན་ པར་ རྒྱས་ པས་ མཐུ ॥

112. Too great affection is often the cause of violent animosity ; for the most part all the quarrels of men arise from a too great familiarity.

113. It may happen sometimes that a long debate becomes the cause of a greater friendship. We see often that commonly such as have disputed with (or against) one another, at last agree.

114. Though an avaricious man possesses wealth, an envious man his associate, an ill-minded man his learning, yet these can produce no pleasure.

115. Covetous men delight in wealth ; the ambitious are pleased when they hear their own praise ; a foolish man is glad when he finds one like himself ; the virtuous man rejoices when he hears the truth.

- 116 མྱེ་ བོ་ ངན་ པའི་ ཡོན་ ཏན་ དང་ །
 སྦྲ་ སྦྲ་ ཞན་ པའི་ ིཐ་ པ་ དང་ །
 ར་ དཔོན་ ངན་ པའི་ བསའ་ རིན་ རྣམས་ །
 བཞན་ ལ་ ཡན་ པའི་ གོ་ སྦྲམས་ དཔའ་ ॥
- 117 བའ་ ལ་ རྟེན་ ཡོད་ སྦྲ་ བ་ མཛེས་ །
 རྟེན་ མེད་ སྦྲ་ བ་ བདེན་ ཡང་ སྦྲང་ །
 མ་ ལ་ ཡ་ རྣམས་ རྩུང་ རྩུང་ རྟེན་ །
 རྩུང་ རྩམ་ ཡལ་ པའང་ རིན་ བའ་ རྟེན་ ॥
- 118 སྦྲ་ མང་ རྟེས་ པ་ འཛིན་ པའི་ རྩུ་ །
 མི་ སྦྲ་ རྟེས་ པ་ སྦྲང་ བའི་ བའི་ །
 རེ་ རྩེ་ སྦྲ་ བ་ བརྟེན་ རྩུ་ བརྟེན་ །
 འདལ་ རྣམས་ རྩུམས་ པས་ བདེ་ བའ་ རྩུ་ ॥
- 119 མི་ བའ་ དཔ་ ལ་ བཤེ་ མེད་ པས་ །
 རྣམ་ པ་ རྩུན་ རྩུ་ ཡན་ བའམས་ རྟེན་ །
 དཔ་ ཡང་ དེ་ ལ་ བཤེ་ མེད་ པའ་ །
 འཕྲད་ པ་ དངོས་ པའི་ རྟེན་ བ་ ཡན་ ॥

116. The qualifications of a bad man, the imperfect learning of a mighty speaker, the kindnesses of a bad master, seldom are useful to others.

117. If a man is opulent, his discourse is pleasing, an indigent, though he speaks the truth, is contemned. A piece of wood if brought from the Malaya mountain, though it is only a common one, has a high price.

118. Much talking is the cause of danger, silence is the foundation of avoiding misfortune. The talkative parrot is shut up in a cage, other birds, that are mute, fly at random.

119. When a man endeavours to be useful to an enemy in every respect, without hypocrisy and when the enemy also yields him without artifice, it shows a great character.

- 120 ལྷ་པས་ བྲལ་ མི་ཡིས་ ཁྱིས་ ཅི་ ཡན།
 ལྷ་པས་ ལྷན་ དེན་ ལ་ ཁྱི་ ཅི་ དཔེས།
 དེས་ན་ ལྷ་པ་ བསྐྱུ་པས་པ་ ལ།
 ཁྱི་ པ་ དེན་ མེད་ འང་ ལྷེན་ ཡན།
- 121 ལྷིན་པས་ བསྐྱུས་ན་ དབ་ ཡང་ འཇུ།
 ལྷན་ མེད་ གཤེན་ ཡང་ འིང་ཇུ་ ལྷོང་།
 བ་ཡི་ འོ་མ་ ཟད་ པ་ན།
 བེའུ་ བཟང་ ཆད་ འཇོའ་ བའ་ འཇུའ། ॥
- 122 འིན་ ལྷ་ ལྷམས་ པས་ ལྷོང་བ་ཡི།
 ར་ བའ་ ལྷན་ གཤེན་ ཆད་ བའ་ ལ།
 པད་མའི་ མཆོལ་ དང་པ་ དལ།
 མ་ བསྐྱུས་ བའ་ ཡང་ འང་ གིས་ འཇུ ॥
- 123 འོངས་ ལྷོང་ ལྷན་པའི་ ལྷེད་ པ་ དང་།
 མཁས་ བའ་ ལྷུའ་ན་ ཇལ་བ་དང་།
 རེན་ པོས་ དམན་ལ་ འེགས་ ལྷོང་བའི།
 གསུམ་ པེ་ གཞན་ བདེ་ འང་ ལ་ ཡན ॥

120. What avails it, if an impotent man is angry? What need is there for a powerful to be angry? Therefore it is unreasonable to be angry for the performance of a thing,—it is but to mortify one's self.

121. With gifts you may gather about you the enemy also; if you give nothing, you are left by your own kindred also. When the cow's milk is deficient the good calf grows meagre, and becomes sorrowful.

122. A master that always treats with kindness his own domestics, may easily find servants and slaves. The geese, without being called, gather together to the lakes where there grow many lotuses.

123. When a man employs his riches, when one is gentle after having become learned, when a great man protects the lower class

- 128 ཆེན་པོ་ རྣམས་ གྱིས་ མཆོད་ ཅུ་བ།
 དམན་ པ་ རྣམས་ གྱིས་ བཞིས་ པར་ འཇུག།
 དབང་ ལྷ་མ་ ཆེན་པོའི་ ལྷི་བོའི་ རྒྱུ་།
 རྩ་ བ་ ལྷ་ མིན་ རས་ ལུ་ ཉེད། ॥
- 129 རིག་ པ་ རྩེགས་ བམ་ ལ་ གནས་ དང་།
 མ་ བསྐབས་ པ་ ལི་ གསང་ ལྷ་གས་དང་།
 བརྟེན་ དན་ རན་ གྱིས་ བསྐབས་ པ་ རྣམས།
 དགོས་ བའི་ རུས་ན་ བསྐྱ་ བ་ མང་། ॥
- 130 རྩེ་ ཡག་ རྣམས་ ལ་ རི་ རིམ་ དང་།
 དམུས་ ལོང་ བ་ ལ་ ལྷོན་ མེ་ དང་།
 མ་ རྩ་ བ་ ལ་ ར་ རས་ དང་།
 ལྷན་ པོ་ རྣམས་ ལ་ ཆོས་ མི་ དགོས། ॥
- 131 ལོན་ རན་ རན་ དང་ གསེར་ བཟང་པོ་།
 གཡལ་ དེར་ དཔུ་ དང་ རི་ བཟང་པོ་།
 ལྷན་ པ་ མཁས་ དང་ རྒྱན་ བཟང་པོ་།
 གང་རྩ་ རྒྱན་ པ་ དེ་རྩ་ རིན། ॥

128. What is respected by the great, is contemned by the low people. The head ornament of the great Ishwosa is devoured by Chandra the Giant.

129. Science existing only in books ; Mantras not committed to memory ; those things which a forgetful man has learned, in the time of necessity often *deceive us*, are deceitful.

130. Sweet scent to dogs and hogs, a light to the blind, meat to indigestion, instruction to foolish men, are not required.

131. A talented (or well qualified) man, and good gold, a brave soldier, and a fine horse, a skilful physician and a beautiful ornament every where find their price (or all esteemed).

132 སྒོ་ དང་ བཙོན་ འབྲས་ ཡོད་ ཟུང་ན།
 དེ་ ཡིས་ བསྐྱབ་པར་ མི་ རྩས་ གང་ །
 དཔ་ ངན་ དཔྱད་ རྩོམས་ བརྒྱ་ གཞིས་ པོ།
 ཟུ་ བསེད་ སྤ་ ཡིས་ བཅོམ་ ཞེས་ གོས་ ॥

133 རི་དང་ རྩ་ བོ་ གླང་ པོ་ རྩ།
 ཞིང་ དང་ རོར་སྤ་ རོད་ བར་ རོ།
 རྩེས་ པ་ སྤང་ མེད་ རིགས་ གཅིག་ བྱང་ །
 མཚོག་ དང་ དམན་ པའི་ ཁྱད་ པར་ ཡོད་ ॥

134 རོར་ གྱི་ མཚོག་ རི་ རྩོན་ པ་ རྩ།
 བདེ་བའི་ མཚོག་ རི་ རིམས་ རྩིད་པ།
 རྩོན་ གྱི་ མཚོག་ རི་ གོས་ པ་ རྩ།
 རྩོམས་ གྱི་ མཚོག་ རི་ མི་ བསྐྱབ་པོ།

135 རོར་ གྱིས་ མ་ གཏུངས་ ལུ་ཡང་ མེད།
 རིག་རྩ་ བདེ་བར་ གདེངས་པ་ ལུ།
 བདེ་དང་ རྩུག་ བསྐྱུ་ གམས་ རྩད་ བྱང་ །
 དཔྱར་ དབྱན་ བཞིན་རྩ་ རི་བར་ འབྱུང་ ॥

རང་བཞིན་གྱི་རྩོམ་བཅས་པའུ། 6

132. If one has a good intellect and diligent application, what is it, that cannot be done by them? The Pandavas, they have I heard, have overcome the twelve troops of the dangerous enemy.

133. Though hills, rivers, elephants, horses, trees, guns, rays of light, storms, men and women, be all of the same kind (in their respective orders or classes) yet there is a difference of our being great (or high) and the other small (or mean).

134. The chief wealth consists in charity, and the greatest happiness in the tranquillity of mind. Hearing (or experience) is the most beautiful ornament; the best companion is he that desires not.

135. There is none that had never been afflicted with a disease for wealth—who enjoys always happiness? Pleasure and sorrow are always changing like summer and winter.

136 བླ་ན་ གཤོག་ ང་ཐུལ་ མ་བ་ དང་ ।
 དཔལ་ ཐུབ་ ལྷན་ པའི་ མོས་ བརྟེན་ དང་ ।
 ཐུལ་ པེ་ མོས་ བཞིན་ མི་ སྤྱོད་པ་ ।
 གཞུམ་ པེ་ རྒྱུ་ མིན་ རྒྱལ་པ་ཡིན་ ॥

137 མི་ རྩེགས་ ཐུ་བ་ རིག་པ་ དང་ ।
 མང་ དང་ འཁོན་ ཅིང་ རྩེགས་ ལྷན་ མོད་
 སྤྱད་མེད་ ཡིང་ འདོད་ ངན་ དང་ འཇལ་ ।
 ལྷ་པོ་ ཐུང་ཅ་ བཞུག་ པའི་ ཐུ་ ।

138 རྩ་ མེད་ གོས་ བརྟེན་ མཆོག་ འདོད་ དང་ ।
 གཞན་ ལ་ སྤོང་ ཞིང་ ང་ ཐུལ་ ཆེ་ ।
 བཞུག་ བཅོས་ མི་ ཞེས་ མཛད་པར་ འདོད་ ।
 གཞུམ་ པེ་ འགོ་ བའི་ བཞད་ གད་པ་ ।

139 ཆེན་ པེ་ རྩེགས་ ལ་ དཔལ་ བས་ ཐུང་ ।
 རང་ གི་ འཁོར་ ཐུས་ གནད་ པ་ མང་ ।
 སྤང་ གེ་ རུས་ གྱི་ འབྱུ་ མན་ པས་ ।
 སྤོང་ ཆགས་ གཞན་ ཐུས་ ག་ ལ་ བ་ ।

VII.—THE UNBECOMING (OR INDECENT) MANNER—

མི་རིགས་ པའི་རྒྱུ་ ।

136. If a slave behaves with great pride, if the actions of an ascetic are fruitless, if a prince does not act according to moral law, all the three have taken an irregular course.

137. To act indiscreetly, to have rancour against many, to quarrel (dispute) with the powerful, to be passionate for the female sex, to cleave to what is bad; these five things are the causes of a quick destruction.

138. When one is poor, and yet would have fine garments, when one, living on the charity of others, behaves haughtily, when he that is ignorant of literary works, wishes to dispute, these three are a laughing-stock to men.

139. Great men (Sovereigns) suffer more injury from their own

- 140 རྩོམ་པ་ལ་མཁའ་ལྷ་མོ་ཕྱེད་ཀྱི།
 དེ་ལ་སྤྱོད་པ་པར་ཕྱེད་པ་ལྟ།
 ལྷ་པོ་ལ་མཁའ་ལྷ་མོ་སྤྱོད་ཕྱེད་ཀྱི།
 དེ་ལ་ལྷ་པོ་མོ་སྤྱོད་པ་ལྟ།
- 141 རྩོམ་པ་ལ་མཁའ་ལྷ་མོ་ཕྱེད་ཀྱི།
 ལྷ་པོ་ལ་མཁའ་ལྷ་མོ་ཕྱེད་པ་ལྟ།
 ལྷ་པོ་ལ་མཁའ་ལྷ་མོ་ཕྱེད་པ་ལྟ།
 ལྷ་པོ་ལ་མཁའ་ལྷ་མོ་ཕྱེད་པ་ལྟ།
- 142 ལྷ་པོ་ལ་མཁའ་ལྷ་མོ་ཕྱེད་ཀྱི།
 དེ་ལ་སྤྱོད་པ་ལྟ།
 ལྷ་པོ་ལ་མཁའ་ལྷ་མོ་ཕྱེད་ཀྱི།
 ལྷ་པོ་ལ་མཁའ་ལྷ་མོ་ཕྱེད་ཀྱི།
- 143 ལྷ་པོ་ལ་མཁའ་ལྷ་མོ་ཕྱེད་ཀྱི།
 ལྷ་པོ་ལ་མཁའ་ལྷ་མོ་ཕྱེད་ཀྱི།
 ལྷ་པོ་ལ་མཁའ་ལྷ་མོ་ཕྱེད་ཀྱི།
 ལྷ་པོ་ལ་མཁའ་ལྷ་མོ་ཕྱེད་ཀྱི།

people, than from their own enemy. By what other animals is the corpse of a lion devoured, except by worms in his own body?

140. When a Master (Ruler) does evil to himself, who can defend him against it? When an object is offuscated by the light itself, there is no means of seeing it.

141. Some malicious men, though they derive no benefit thereof, like to do evil to others. Though a venomous serpent feeds on air, yet, when he sees others would he not kill them?

142. Though our lust fancies to be happiness, yet practice of it is the cause of sorrow. He that places happiness in wine-drinking, imagines that it is a mad man only that is happy.

143. Men wish to live long, and, when grown old, they are afraid of old age. To be afraid of old age, and to wish to live long, is the wrong principle (theory) of a foolish man.

- 144 ਭਾਦ੍ਰਵਿਭਾ ਮਾਭਾਨਾਪਾ ਘੋਰਾ ਧਰਿਤ੍ਰਿਤੁ ।
 ਦੇ ਭਾਨਾ ਘੋਰਾ ਧਰਿ ਮਿ ਸ਼੍ਰੇਧਾ ਕ ।
 ਮਿ ਦੇ ਭਾਦ੍ਰਵਿ ਭ੍ਰਿਸਾ ਧਰਿਤ੍ਰਿਤੁ ।
 ਘਾਦ੍ਰਾ ਕ ਭਾਨਾ ਭ੍ਰਿਸਾ ਮਭਾਨਾ ਧਾ ਘੋਰਾ ॥
- 145 ਭਾਦ੍ਰਵਿ ਘੋਰਾ ਭ੍ਰਿਸਾ ਘੋਰਾ ਧਰਿਤ੍ਰਿਤੁ ।
 ਭ੍ਰਿਸਾ ਧਮਾ ਭ੍ਰਿਸਾਪਾ ਮਿ ਭਾਦ੍ਰਵਿ ਕ
 ਮਿ ਦੇ ਭਾਦ੍ਰਵਿ ਭ੍ਰਿਸਾ ਧਰਿਤ੍ਰਿਤੁ ਪਾ ਧਮਾ ।
 ਘਾਦ੍ਰਾ ਕ ਘੋਰਾ ਧਰਿਤ੍ਰਿਤੁ ਮਭਾਨਾ ਧਾ ਘੋਰਾ ॥
- 146 ਭ੍ਰਿਸਾ ਧਰਿਤ੍ਰਿਤੁ ਭ੍ਰਿਸਾ ਧਰਿ ਮਿ ਸ਼੍ਰੇਧਾ ਕ ।
 ਦੇ ਘੋਰਾ ਭ੍ਰਿਸਾ ਭ੍ਰਿਸਾ ਧਿ ਭਿਭਾ ਧੁ ।
 ਘੋਰਾ ਧਰਿਤ੍ਰਿਤੁ ਮਭਾਨਾ ਕ ਘਾਦ੍ਰਾ ।
 ਭਾਦ੍ਰਵਿ ਭਾਦ੍ਰਵਿ ਧਰਿਤ੍ਰਿਤੁ ਧਾ ਧਾ ਘੋਰਾ ॥
- 147 ਭਾਨਾ ਭ੍ਰਿਸਾ ਮਭਾਨਾ ਧਰਿ ਸੇਭਾਨਾ ਧਰਿ ਧਾ ।
 ਘੋਰਾ ਭ੍ਰਿਸਾ ਘੋਰਾ ਧਰਿ ਭ੍ਰਿਸਾ ਮ ਭ੍ਰਿਸਾ ।
 ਧੁ ਧਿਭਾ ਭ੍ਰਿਸਾ ਧਰਿ ਭ੍ਰਿਸਾ ਮਭਾਨਾ ਧਰਿ ।
 ਧਰਿਤ੍ਰਿਤੁ ਧਾ ਧਾ ਧਾ ਧਾ ਧਾ ਧਾ ॥

144. When there is a wise instructor, and one will not learn from him, to improve in good qualities, such man is either occupied by the devil, or suffers the ill consequences of his former works (actions).

145. He that is possessed of wealth, and does not enjoy it himself, neither bestows it charitably on others, either has fever, or is an accomplished miser.

146. Who knows what virtue is and does not practice it, to what use is his religion? Though there be a fine crop, the wild beasts, do they rejoice in it?

147. He that is afflicted with the ill consequences of his moral actions, though he has riches, cannot enjoy them. Though the crow be hungry, yet, since there is a snare laid, how can he fully be satisfied?

- 148 རྒྱུད་ དམ་ རྒྱུན་ པར་ མི་ རྒྱལ་ པའི་ །
 རྒྱུད་ དེ་ རྒྱལ་ པར་ པསྒོམ་ ན་ ནེ་ །
 རི་ པོ་ བསེར་ རྒྱུ་ པསྒོམ་ པ་ཡི་ །
 རྒྱལ་ པོ་ པསྒྱུ་ པ་ པ་ ཡིན་ རྒྱུ་ སྟེ་ །
- 149 རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ །
 རྒྱལ་ པ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ །
 རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ །
 རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ །
- 150 རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ །
 རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ །
 རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ །
 རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ །
- 151 རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ །
 རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ །
 རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ །
 རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ རྒྱལ་ །

148. If you think a man to be rich that neither can enjoy, nor bestow charitably his substance on others, it is very easy for you to make a rich man, by fancying that a whole mountain consists of pure gold.

149. Though there be many learned men, who know and tell what not a virtuous action is; there are very few in this world who would practise it, after having it thus understood.

150. Though a man has his birth, form, juvenile age, yet, without good qualities, he is not handsome; though peacock's feathers be beautiful, yet will they be convenient for the ornament of a great man?

151. By no endeavour can it be done that a naturally bad man be turned into an honest man. How long soever you boil water, it is impossible to make it burn like fire.

152 གྲུ་ མཚན་ བཏྲགས་ ཀས་ ཁྱོ་ བ་ ནི །
 རྒྱུ་ རྩ་ འིགས་ ཞིང་ སེལ་ བཟང་ ཞེས །
 གྲུ་ མེད་ པ་ནི་ ཅང་ ཁྱོས་ པ
 དེ་ཡི་ བསལ་ གཤམ་ ལྷ་ ཡིས་ ཞེས ॥

153 བསྟོང་ ཀམས་ རྩ་ ཁྲ་ དན་སེམས་ མྱེ །
 འིགས་ ཆད་པ་ན་ སྤ་ དན་ མྱེ །
 རྟོ་ རྩ་ པ་ན་ ཀམ་ ཆགས་ མྱེ །
 རྟོ་ རྩ་ པ་ན་ འཚི་ ལྷས་ འབྲུང་ ॥

154 འང་ གིས་ དན་ཕྱོད་ མ་ ཐུས་ ན །
 བཅྱ་ ཐུན་ གིས་ ཐུང་ སྤ་ མི་ རྩས །
 རྩ་ མིག་ འང་ ནིད་ མ་ བསྐྱམས་ ན །
 ས་ ཡི་ མནན་པས་ ག་ ལ་ གྲུབ ॥

155 རེགས་ གི་ འུགས་ གིས་ ཁྱིང་པ་ན །
 སྟོ་ ཆེན་ ལོག་ པའི་ ལམ་ ལ་ འཕོ །
 ལྷ་ ཐུགས་ ཐུང་ པའི་ སྟོན་ པའི་ མཚོག །
 དབང་ ལྷུག་ ཐུན་ པའི་ རྩལ་ འུགས་ འཛིན ॥

152. If there is reason for it, it is somewhat proper to be angry, and there is also a cure for it; but who knows the mode of appeasing one when grown angry without a cause?

153. When one's virtues fail, then arises ill-will; when the right family descent is extinct, then will be born a bastard (then comes a base-born): when wealth has been expended there exist desires; when life is spent the symptoms of death appear.

154. If one has not committed any wicked action, Indra himself also cannot lay on him any blame. How can a water-spring be depressed, by laying (or heaping) earth on it, as long as it does not become dry by itself?

155. If conducted in a handsome manner, great minds follow a wrong way. The mad principal of the Tirthikas adopts the practices of Ishoora, the teacher.

156 ཏ་ ཅད་ ལོངས་ སྤྱོད་ བསམས་ བསམས་ ཀ །
 གོང་ ཀི་ འད་ གི་ གཤེད་ མ་ ཡིན །
 སྤང་ སྤོལ་ ཡལ་ ཆེར་ ཐུག་ པོ་ ལ །
 འབྱུང་ གིས་ སྤང་ པོ་ བདེ་ བར་ རྒྱ །

157 ཏ་ ཅད་ མཐུ་ རྩལ་ ཆེ་ བསམས་ ཀ །
 རྩལ་ པའི་ རྩ་ གོན་ ཐེད་ པ་ ཡིན །
 གཡུལ་ ཅ་ བསད་ པ་ ཡལ་ ཡ་ ཆེ །
 མཐུ་ རྩལ་ ཅན་ ལ་ འབྱུང་ བ་ མད་ །

158 འབྱུང་ དད་ ཞེས་ འབ་ རྩལ་ ལ་ སོགས །
 བསོད་ ཀམས་ རྩན་ ཀ་ བོགས་ རྩ་ འབྱུང །
 བསོད་ ཀམས་ མེད་ ཀ་ དེ་ དག་ རྩན །
 བདག་ ཉིད་ བསྐྱེད་ པའི་ རྒྱ་ ཅ་ འབྱུང །

159 མཇས་ པས་ ཐུ་ བ་ ཅི་ ཐེད་ ཐུང་ །
 འད་ གི་ བསོད་ ཀམས་ བདགས་ ཏེ་ ཐུ །
 རྩོད་ ཅས་ བསོད་ ཀམས་ སྤྱན་ ཆོ་ གས་ པ །
 རྩེ་ བོ་ བརྩ་ ཡི་ ཀད་ ཀ་ དཀོན །

156. When a man becomes too famous for his riches, he is destroyed by his wealth. It is commonly rich men that are assaulted, beggars pass through without any molestation.

157. It is but to propose his own destruction, when a man becomes too renowned for his strength and skill. In battle mostly are slain such as have been strong and skilful.

158. Wealth, wit, strength, and the like, all will associate with you, if you have moral merits (if you are virtuous) but, if you have none, they become the cause of your ruin.

159. A wise man, whatever he does, must act with due consideration of his moral merits. At the time of contest, among a hundred persons, it is rare to find one of accomplished moral merits.

- 160 རྩིང་ངན་ ལྷ་ ཡིས་ ཁེངས་པ་ན།
 རྩོགས་ གཅིག་ ཅི་ནས་ འཛིག་པ་ ལྟུང་།
 གང་ ལ་ ཉེན་ ངང་ ལྷན་ ལྟུང་ པ།
 དེ་ ལ་ རིགས་ བརྒྱུད་ ཞིན་ཏུ་ དཀོན་ ॥
- 161 བྱ་དང་ ལྷན་ ན་ ཉེང་ ཅན་ དཀོན་།
 དེ་ དང་ ལྷན་ ན་ དག་ བོས་ འཛིམས་།
 དམས་ ཅད་ ལྷན་ ལྷན་ རྩོགས་ ལྟུང་ན།
 མི་ དེ་ ལྟུང་ཏུ་ འཛི་ བ་ མང་ ॥
- 162 དེས་ ནས་ མཁས་ པས་ བསྟོད་ ནམས་ བསག་།
 བསྟོད་ ནམས་ ཁོ་ ན་ ལྷན་རྩོགས་ ལྟུང་
 ལྷ་ ཞིག་ གང་ ན་ ལྷན་ རྩོགས་ ཡོ།
 དེ་ ནི་ བསྟོད་ ནམས་ བསགས་པའི་ རིགས་ ॥
- 163 ལྷན་ ལྷིས་ ས་ རྩོག་ བསྟུ་ལེ་ ཞེས་།
 ལྷམ་ ན་ རྩང་ ཉིད་ བསྟུས་ པ་ ཡིན་།
 ལན་ ཅིག་ ལྷན་ཏུ་ ལྷས་ པ་ དེ་།
 བདེན་པ་ ལྷས་ཀྱང་ དེགས་ པ་ ལྟུང་ ॥

160. When a bad tank is full of water, certainly it will break out on any side. They that grow rich, seldom leave a posterity.

161. Seldom is found a rich man, that has children also; but if he has both, he is often destroyed by an enemy. When one is happy in every respect, it happens frequently that such a man is carried off by an early death.

162. Therefore a wise man must acquire moral merits; it is only virtue that is the cause of every happiness (or prosperity), when a man is prosperous in every respect, it is the sign of his having acquired moral merits.

163. He that thinks thus: I will deceive him, he deceives himself. If one has told one falsehood, afterwards, though he speak the truth, he will be doubted.

- 164 ལེགས་ ཞེས་ རྣམ་པར་མི་དཔྱད་པ།
 རྩོས་ ཞིང་ ས་འོག་ གནོད་ འབེབས་པ།
 རྒྱང་ མ་ བསད་ པའི་ གི་བ་ ལྟར།
 གློགས་ དང་ བུ་བའི་ ལྷ་དན་ འོག ॥
- 165 མོ་ལ་བ་ དེར་ རྣམ་ འཕྲུལ་པ་ལ།
 འདི་ ལྷི་ གནོས་ ཀ་ འབྲུལ་མི་ འབྱུར།
 འབད་ པ་ མེད་ ཀ་ ཞིང་ བཟང་ ཡང་ ཀ།
 ལོ་ རྣམ་ འོག་ པར་ མི་ འབྱུར་ འོ ॥
 མི་ རིགས་ པའི་ རྒྱལ་ བདེན་པ་ཏྲེ།
- 166 སྒོ་ལྷན་ ལ་ བ་ རྒྱང་ བད་ ལྷང་ ཀ།
 རྒྱུ་ ར་ གོས་ ལེས་ བསྐྱུལ་པར་ ལ།
 སྐྱུ་ པར་ ལྷར་ ཀ་ ལྷ་ ཅི་སྒོས།
 མ་ སྐྱུ་ ཀ་ ཡང་ མཛོས་ པའི་ རྒྱ ॥
- 167 རེམས་ རན་ མོས་ པ་ ལྷ་ རྣམས་པ།
 རམས་ རད་ མཐུ་ བ་ ལུས་ ལྷང་དཀར།
 རང་ རིང་ ཡོན་ རན་ ལྷན་ ལུས་ ཀ།
 རམས་ རད་ མཐུ་ བ་ དེ་ ལ་ རེ ॥

164. He that does not examine what good and evil is, and, in his angry fit, injures his neighbour, he shall grieve, like the swallow bird, for his being deprived of his associate.

165. Both here and in the next world, if you are deficient in earnest application, you cannot be prosperous. Though the land be good, you cannot have a (plenteous) crop, without cultivating it diligently.

VIII.—THE ACTIONS (OR DOINGS) OF MEN (ལ་བ་).

166. An intelligent (pundit) man must always do a small thing also with due consideration, should he succeed (in his offices) what is there more desirable: but should he fail, it is yet handsome to have acted prudently.

167. The minds (sentiments) of men are very different—who-

- 168 શેક' ક્ર' ક્ષ' પા' છુ' કૈ' યદ' ।
 દે'સ' પ' મદ' ક્ર' વચ્ચ' પા' છુ ।
 ક્રી' મપ' દે'સ' પ'સ' યક' પ' ક્રે ।
 ક્રી'ક' પ' યે'સ' શ્રુદ' ક' ચ' યક ॥
- 169 યે'ક' નક' શ્રુક' ક્રે'લ'સ'ક્રે'પ'વક્રેક' ।
 યદ'ક' દા'મચ' રૂ'લ'સ' વ' વદે ॥
 ક્રુમ'પ' ક્ર' યે'સ' શદ' વ' ક્ર ।
 યદ' ક' ક્રે'દ' પ' રૂ'લ' વ' દે ॥
- 170 યે'ક'નક' ક્રુદ' ત્રદ' વચ્ચ'વ' પરી' મે ।
 સુ' લે'લ' લે'સ' કી' રૂ'લ'વપ' ક્રુસ ।
 ક્રુસ' ક્રે'દ' શદ'વરી' ક્રુમ' પ' દે ।
 મર્ગે' ચ' રૂ'લ'ક્ર' સુ' યે'સ' ક્રુસ ॥
- 171 મે' શદ' ક્રે' વે' દમ' પ' દદ' ।
 દમક' પરી' ક્રુદ' પા'રૂ'લ'સ' શે'સ' ક ।
 દે' યે' છુ' વ' વચ્ચ'વ' શ'સ' પ ।
 ક્રુક' સુમ' કૈ'લ'સ' પરી' શલે' કૈ'ક' યે'ક ॥

soever he be, it is difficult for him, to please all (to satisfy the wishes of all)—he is near to do so, who makes himself accomplished in all good qualities.

168. Increase your wisdom (experience) in your very declined age also. In the next life it will be useful to you, what will then avail your alms ?

169. Either keep to him that is accomplished in science, or converse with ordinary men. You may carry easily with you a bottle, when it is either full or entirely empty.

170. Who can bear a man who is but little conversant with science ? who can carry a water-pot on his head, when it is but half filled ?

171. He that understands well the difference between an excellent and a low man, knows how to do his business (or how to act). This is the great foundation of prosperity.

- 172 སྤྱོད་ སྤྱོད་ བཞུག་ པས་ རེགས་ སྤྱདས་ ཀ །
 སྤྱོད་ བོ་ སྤྱས་ པའད་ མཆེག་ ཏུ་ འགྱུར །
 སྤྱལ་ ཤས་ དག་ གིས་ ཀེ་ རྩོ་ ལ །
 བསྐྱབས་ ཀ་ འདོད་ པ་ ཤས་ པར་ འགྱུར །
- 173 ཉམས་ སྤྱོདས་ རྒྱད་ བའི་ སྤྱོད་ པེ་ ཡང་ །
 ཆེན་ པོ་ གཞན་ ལ་ བ ཆེན་ ཀ་ འགྱུར །
 རྒྱ་ ཡི་ གིགས་ པ་ ཉམས་ རྒྱད་ ཡང་ །
 མཆོ་ དང་ འདེས་ ཀ་ ག་ ལ་ བསྐྱམ །
- 174 རང་ ཉིད་ སྤྱོད་ སྤྱོད་ མ་ ལྷན་ ཡང་ །
 སྤྱོད་ ཆེན་ གཞན་ ལ་ རེགས་ བར་ འདེ །
 ལག་ པས་ དཔ་ བོ་ མི་ གསེང་ ཀ །
 མཆོན་ ཆ་ རེན་ པར་ མེ་ རྩེད་ དམ །
- 175 གནོད་ པར་ རྩེད་ པའི་ དཔ་ བོ་ ཡང་ །
 གཙས་ དང་ ལྷན་ ཀ་ སྤྱོདས་ རྩེད་ འགྱུར །
 རྩེད་ ཆེན་ སྤྱས་ ལ་ གནོད་ མེད་ རྩེས །
 སྤྱོད་ བ་ རེས་ ཀ་ སྤྱོད་ རྩེད་ འགྱུར །

172. With a firm resolution for perfection, a low man also may yet become a principal, if a parrot is well instructed by those who understand teaching, he will know one's worth.

173. Men of little abilities also, if they depend on the great, may succeed (or prosper). A drop of water, is a small thing, but, when united with a lake when will it dry away?

174. Though a man is not intelligent by himself, yet he consults prudently another wise man. The hand does not kill an enemy, but if it takes a weapon, may it not do so?

175. Of a dangerous enemy also, if you know the means, you may make a confederate. Large quantity of poison hurts the body, but if you know how to make the mixture, it turns into medicine.

- 176 འིག་པས་ བཞེད་ པའི་ རས་མོའ་ སྤང་ ।
 མི་ གེས་ གཞན་ ལ་ རྩོམ་ སེམས་ སྤང་ ।
 བྱང་ གེས་ བྱིང་ རྩོམ་ སྤང་ གས་ ।
 དེ་ ལས་ གལ་ ཀ་ རྩོང་ བའ་ འཁྲུང་ ॥
- 177 རི་མྱིད་ འང་ རྩོམ་ མ་ རྩོགས་ པ་ ।
 དེ་ལྟི་ བའ་ ར་ དབ་ རྩོམ་ བཟུང་ ।
 རྩས་ པ་ རྩོགས་ རས་ གང་ འིགས་ བ་ ।
 ར་ རེས་ བཟུན་ བཅོས་ གཞན་དག་ རྩ ॥
- 178 མཆོད་ འོས་པ་དང་ འཁོར་ རྩོམ་ རྩང་ ।
 རིག་ཏུ་ རྩོན་པས་ བཟུ་ བའ་ ར་ ।
 མཆོད་ གཏེར་ ལ་རྩི་ རྩ་ རྩོམ་ དང་ ।
 ལྟི་ དྲགས་ བའ་ར་ མཐུ་ བའ་ གཟུངས ॥
- 179 རི་བོས་ འབངས་ ལ་ མི་ གཞོད་པའ་ ।
 འིགས་ པའི་ འམ་ རྩས་ དལ་རྩོམ་པཟུ་ ।
 ལྷ་ལའི་ བྱིང་ ལ་ རྩོམ་ཁྱི་ བཟུང་ ।
 གཟུག་ པ་ མང་ན་ རྩོམ་པའ་ འཁྲུང་ ॥

176. Aught of the food and money which is offered to you for your learning; listen to others and leave off pride. You may take the fruit from the top of a tree, but, if you reach farther, you fall down.

177. As long as you have not sufficient strength, bear (have patience with) your enemy; when you are strong enough, do as it seems best to you. Thus it is said in other shastras.

178. Treat with due respect, and reward always liberally those round about you. It is said, that with sacrifices and offerings we will have all from the gods down to the spirits (or ghosts).

179. In a becoming manner a prince may tax his subjects without oppressing them. A Sābtru becomes dry, if too much fragrant juice issues from it.

- 180 འད་སྤྱོད་ འཕད་པར་ སྤ་བར་ཕ །
 ཡལ་ ཆེར་ གསལ་བར་ བསྟན་པས་ ཉམས །
 སྤུ་ རྩོམ་ གར་ མི་ ཕྱད་ ན །
 མཐུལ་དུ་ གས་ པ་ ཅི་སྟེ་ འདྲེགས །
- 181 གཞན་ གིས་ བཞས་ པར་ ཐུར་པ་ཡི །
 རས་ དང་ རོར་ ཐུས་ ཅ་ གིས་ ཕ །
 རྩི་ ཡག་ མི་ གཅིང་ ར་པ་ལ །
 མཇས་ པ་ སྤ་ གིས་ ཡིད་ སྟོན་ཕྱད །
- 182 ཡ་འལ་ འཛིང་ ལ་ འཕྲེབ་ལ་ རྩི །
 དལ་ བོ་ ལ་ ཡང་ སྤ་ མ་ཕ །
 སྤ་ ཅ་ བཞིན་ཅ་ འད་ ཉིད་ལ །
 དེ་མ་ གས་དུ་ ལེ་ ལན་ འཕྱད་ །
- 183 གལ་ ཏེ་ དལ་ ལ་ གནད་ འདྲོད་ན །
 འད་ ཉིད་ ཡོན་ ཏན་ རྟན་པར་ ཕ །
 དེ་ཡིས་ དལ་ཡང་ རེམས་ སྤེག་ཅད་ །
 འད་ཡང་ བསྐྱོད་ ཉམས་ འཕྲེབ་པར་ འཕྱར །

180. Be studious to conceal the manner of your actions. Commonly, it is weakness to show it plainly. Had the eye not been found devising they would not have tied a rope on his neck.

181. To what use are such food and goods as are contemned by others? What wise man would have such dirty things as are eaten by dogs and swine?

182. We should never use such expressions as might hurt one, not even against an enemy; they immediately will return on us, like an echo from a rock.

183. If you wish to injure an enemy, make yourself perfect in all good qualities. By doing so, the enemy himself will be mortified, and you yourself also shall improve in virtue.

- 184 མི་ སྤྱན་ དག་ ལ་ ཐུམས་ སམས་ སྦྱང་ །
 རྩོལ་ ཆེས་ ཁི་ ཀས་ གཟུལ་བཟུང་ ཐུ །
 འད་ ག་ ལུས་ ལ་ ཡན་ འདྲེང་ རྩམས་ །
 གཏུང་ བཤྲེག་ སྦྱང་ བྱིས་ ཀད་ རྩམས་ འདྲེན་ ॥
- 185 འད་ ཕྱེགས་ སྤང་ ཡང་ སྤང་ མི་ ཐུ །
 དག་ ཕྱེགས་ ཐུམས་ ཐུང་ འཇུ་ མི་ ཐུ །
 ཐུ་ རྒྱ་ ཐུ་ རྒྱ་ གིས་ འཇི་ ཡང་ །
 འུག་ པ་ རྩམས་ རང་ མཐུན་པ་ མན་ ॥
- 186 ཐུ་ བ་ ཆེ་ རུང་ གང་ ཐུང་ ཐུང་ །
 མཁས་ པས་ རྒྱ་ ཐུ་ བསྐྱེམས་ རེ་ ཐུ །
 སེང་ གས་ རི་ བོང་ རུང་ ཆེན་ གནེས་ །
 གསོད་ པའི་ ཆེ་ ཀ་ རྩམས་ རྩང་ མེད་ ॥
- 187 བངག་ པས་ མཐེ་ བའི་ རམ་ པ་ ལ། །
 བརྟེན་ པས་ བངག་ ལ་ ཡན་ པ་ འབྱུལ་ །
 རྩེན་ པའི་ རོས་ ལ་ གནས་ པ་ ཡི། །
 ཐུ་ རྩམས་ གསེར་ ན་ སྤང་ བཟུང་ འབྱུང་ ॥

184. The foolish man is tender-hearted to an enemy: this must be subdued in a rough manner. They that wish well to their own body, take out the disease of it, by bleeding and caustic operations.

185. Though our own party is angry with us, we should not desert it. Though an enemy treats us with kindness, we should not embrace his cause. Though a crow hurts another crow, yet they do not agree with the owl.

186. A wise man, whatever he does, whether great and small things, must do them with due consideration. When the lion kills both the hare and the elephant, he has no time for consideration.

187. If we keep to such as are more excellent than we, we profit thereby. Those birds that abide on the side of Sumeru (Kirab) seem to shine like gold.

- 188 ཆེན་ པོ་ སྤྲུལ་ རྟེན་ ལྷན་ པ་ ལ།
 བདེན་ ཀ་ ཆེན་ པོ་ གྲོ་བ་ མི་ འབྱུང་ །
 ཉི་ མའ་ འད་ ལ་ ཉི་ པ་ ཡིས་ །
 སྒྲི་ བ་ མའ་ དའ་ གྱུང་ ལ་ ཉུམ་ ॥
- 189 མི་ གང་ མཛེའ་ བ་ མི་ བཞེན་ པ།
 དེ་ དང་ འབྲེགས་ པ་ སྤྱི་ འིག་ ཟུམ་ །
 ཀམ་ མཁའ་ འཛེའ་ ཆེན་ མདུག་ མཛེས་ ལྷང་ །
 གྲིན་ ཏ་ འེ་ ཀ་ སྤྲུལ་ པོ་ འབྱུང་ ॥
- 190 བདག་ ཉིད་ གང་ ལ་ མི་ དགའ་ བ།
 གཞན་ ལ་ སྤྲུལ་ ཏ་ དེ་ མི་ ལ།
 གཞན་ གྱིས་ རྒྱང་ རྟེན་ གཞིས་ པའི་ ཆེ།
 བདག་ ལ་ བསམ་པ་ ཅི་ ཡོད་ བསམ་ ॥
- 191 བདག་ ཉིད་ གང་ ཞག་ གང་ དགའ་ བ།
 དེ་ ཉིད་ གཞན་ ལ་ སྤྱུང་ ལུས་ ཀ།
 གཞན་ གྱིས་ བདག་ ལ་ གང་ དགའ་ བ།
 དེ་ ཡི་ རྒྱུ་ གྱིས་ མཆོད་ པའ་ འབྱུང་ ॥

188. If you depend on an envious great man, you never shall obtain renown. See how the moon does decline after having approached to the sun.

189. Who can associate with such a man, as keeps no friendship? Though a rainbow is beautiful, it is a foolish man's error if he takes it for a real ornament.

190. What we like not for ourselves, we never should do to others. When we are injured by others, we should reflect on, what think we then in ourselves?

191. If we do to others what is agreeable to us, others also, in the same manner, will honour us with a pleasing return.

- 192 དམ་ པ་ དག་ ལ་ བདེན་ པ་ དང་ །
 མཁས་ པ་ དག་ ལ་ འཛི་ བ་ དང་ །
 གཞུང་ བཟང་ པ་ དང་ འཕྲིན་ པ་ ཀྱི་ །
 ལུ་ ལ་ ཡོང་ པ་ རྒྱུ་ ཅ་ བདེ་ ॥
- 193 གམས་ རྒྱུང་ རྣམས་ གྱིས་ འད་ ཉིད་ གྱི་ །
 སྒྲ་ བ་ དམས་ ཅན་ འབྲུག་ པར་ བསམ་ །
 དེ་ ལྟར་ གོ་ ཀ་ མེ་ སྒྲ་ བའི་ །
 མི་ ལ་ གཞན་ གྱིས་ བཟུང་ བ་ ཉེ་ །
- 194 ལུག་ དང་ ཅུས་ ལ་ བཏ་ པའི་ རྒྱུ་ །
 འབ་ ཏུ་ བསྐྱེམས་ དེ་ ལན་ འགའ་ སྒྲ་ །
 འཇགས་ བཞད་ ཡོན་ གུང་ མང་ ལྟར་ ཀྱི་ །
 རྒྱུང་ རྒྱུང་ ལྷན་ བཞིན་ རིན་ མི་ འབྲུང་ ॥
- 195 འད་ རྒྱུན་ མཁས་ པ་ རྣམས་ གྱིས་ གུང་ །
 རྒྱུན་ ཅ་ ག་ བ་ ཞིན་ ཏུ་ དཀའ་ །
 མང་ བོས་ བདག་ ལ་ དེ་ སྒྲུགས་ ཀྱི་ །
 རྒྱུན་ རྒྱུན་ ཡོན་ པར་ ཞིན་ ཏུ་ དཀའ་ །

192. He is always happy, who has the opportunity of depending on the excellent, of asking (consulting) the learned, and of conversing with good-natured men. -

193. Weak-minded men fancy (think) that every thing that they speak, is erroneous. The man who thinks thus, if he do not speak, is very much to be suspected by others.

194. At its proper place and time, after having well considered, speak some time. Though you utter only (or all) elegant sayings, yet if too much, like overplus merchandises, they have no price.

195. It is very difficult (or seldom) in learned men also, to take for a defect the imperfection, that they have. Take care, whoever (studiously) confesses of himself to have such defects, he is a faulty man.

- 196 ཀེར་ དང་ གཤམ་ འཁོར་ མེད་ ཀ་ ཡད་ །
 མཛིའ་ བོ་ གླེ་ ལྷན་ འབྲེགས་ ཡོད་ ཀ་ །
 ཅད་ འབྲེགས་ གྲང་ ཀི་ དེན་ གྲུབ་ ཀ་ །
 མི་ ཡི་ འབྲེ་ བ་ གླེས་ ཅི་ དཔོས་ ॥
- 197 ལྷན་ འིངས་ འཁོན་ པའི་ དཔ་ བ་ དང་ །
 མཛིའ་ བ་ ཕྱད་ གྲང་ བཤེ་ མི་ ར་ །
 ཤིན་ ར་ ཚི་ བའི་ ར་ ཉིད་ གྲང་ །
 མ་ དང་ ལྷད་ ཀ་ མ་ གཤམ་ དམ་ ॥
- 198 གཞུང་ བཟང་ དེ་ ཚེ་ ཁྱིལ་ ཡོད་ ཀ་ །
 དཔ་ བོ་ ལ་ ཡང་ ཡོད་ བཞན་ རྒྱང་ །
 གཞུང་ བཟང་ དཔ་ ལ་ གྲུབས་ སོད་ བས་ །
 སྤུང་ ཤི་ བའ་ ཅ་ གྲུབས་ པ་ ཐོས་ ॥
- 199 འད་ ཤིས་ འེགས་ པའ་ ཤེས་ ཀ་ ཡད་ །
 ར་ བ་ ཐམས་ ཅད་ ཤོས་ རྒྱས་ ར་ །
 མ་ གང་ ཤོས་ ལ་ མི་ དཔའ་ བ་ །
 འབྲེད་ པ་ འིན་ ཚན་ ཉེ་ བ་ ཡིན་ ॥

196. Without wealth, and without a train of servants, if there is for companion an intelligent friend, a beast also may find his concern, how much more a man ?

197. With an enemy, who is from long time voracious against us, we should not coalesce, though he be desirous of our friendship. If fire meets (or comes in collision) with hot water will it not be extinguished by this ?

198. We may rely upon an enemy too, when he is a good-natured, righteous and honest man. I have heard, that one, by resorting for protection to a good-tempered enemy, has been defended by him until his life's end.

199. Though you be well acquainted with the subject (or matter) do every thing with due consideration, he, that neglects it, shall dearly pay for his indiscretion.

- 200 གཡ་ ཏེ་ ངག་ རྒྱལ་ རེད་ ཀ །
 རེ་ ལ་ མཚོན་ གན་ རྩེན་ པན་ བཙོད་ །
 ར་ ཏ་ རྩི་ པ་ ལ་ བརྟན་ པས་ །
 བདེ་ བ་ ཐོལ་ ཅེས་ རྩེན་ རལས་ སྟ ॥
- 201 རེགས་ པར་ བདྟགས་ ཀས་ རེད་ པ་ ལ་ །
 ར་ བ་ ཉམས་ པ་ ག་ ལ་ རྩོད་ །
 རིག་ རྩེན་ བདྟགས་ ཀས་ རེག་ བ་ ལ་ །
 གཡང་ ས་ གམས་ པ་ རེད་ ར་ རམ་ ཅི ॥
- 202 རང་ ཉིད་ ཅིས་ རུང་ མཐོ་ རེད་ ཀ །
 གཞན་ ལ་ ཡན་ པ་ རལ་ རིག་ རྩིས་ །
 རུང་ ལ་ རྩི་ རེད་ ར་ ཀམས་ །
 རྩེན་ ལ་ མེ་ རོང་ མི་ རུང་ རམ ॥
- 203 ཡ་ རེ་ ཅི་ ཀས་ གཞོམ་ རེད་ ཀ །
 རང་ གི་ རོན་ ཏན་ རལ་ བསྟལ་ །
 ངག་ བོ་ གཞོན་ པར་ རེད་ བ་ ཀམས་ །
 མཚོན་ ར་ རལ་ ཀ་ རྩེན་ ལ་ རྩོས་ ॥

200. If you resort for protection to an enemy, show him every respect and reverence. The raven, by depending on the rat, was saved, according to the Purānas.

201. How is it possible that you should fail in your affairs, when you act with discretion? If a clear sighted man walks discreetly, will he not avoid the precipice?

202. The more you desire to be exalted, the more you endeavour to be useful to others. They that wish to decorate their face, would they not first make clean the looking-glass?

203. The more you endeavour to conquer an enemy, the more you exert all your good qualities. See how they are confounded (or afraid) when they see their enemy make ready his weapons.

- 208 བྱ་ བ་ ཆེན་ པོ་ བསྐྱེད་ པའི་ ཆེ་ །
 འཕད་ པ་ ངག་ གྲིས་ བྲེགས་ བཟང་ བཞེན་ །
 ཉགས་ ཚྲིལ་ ཆེན་ པོ་ མེས་ བཞེག་ ཉ་ །
 རྒྱུང་ གཤིག་ ཅི་ ཉས་ བྲེགས་ རྩ་ ངགས་ ॥
- 209 འཕེདས་ རྒྱུང་ གཟུང་ བ་ མ་ བྱ་ ཞྩེ་ །
 འཕྱེའ་ རྒྱུང་ ངགའ་ བས་ རྩེགས་ མ་ བྱ་ །
 ལས་ རྩི་ འཕེན་ པ་ རྒྱུང་ རྩིང་ བསམ་ །
 རྒྱུང་ རྩེག་ ལྷ་ ཆེགས་ ང་ བཟེང་ འཕྱུང་ ॥
 བྱ་ བ་ བཟླ་ པ་ ཞྩེ་ །
- 210 འཕྱོ་ མགོན་ ལངས་ རྩས་ བཟུགས་ བཞིན་ ཅ་ །
 རྩོན་ པ་ གཞན་ ལ་ རྩས་ རྩད་ པ་ །
 ཡན་ ལག་ བཟྱང་ ལྷན་ རྩ་ འཕྱམ་ ཅ་ །
 བ་ རྩྱེ་ རྩོན་ པ་ སོ་ བ་ ཡན་ ॥
- 211 ངངས་ པོ་ གང་ ངང་ གང་ ལ་ ཡང་ །
 གམས་ ཉ་ ངགའ་ བ་ ཅ་ ཡང་ མེད་ །

208. When you are about to perform any great thing, endeavour to have a good associate. If you will burn up a forest, you want of course the aid of a wind.

209.—Be not grieved, if you are indigent, neither be elated with joy, if you are in affluence, think on the consequences of your moral works. All sorts of prosperity and distress are but temporal (or of short duration).

210. If a man pays respect to another teacher, though Buddha, the patron of men, is to be found here, he sinks a salt-well on the bank of a river whose water possesses eight good qualities.

IX.—RELIGION ON GOOD MORALS (ཆོས་).

211. There is no difficulty to perform whatever thing, if we are

བཟོ་ཡི་རིག་ཕྱད་སྤྲུངས་པ་ལྟར།

དམ་ཚེས་དགའ་བ་མད་པར་འབྱུང།

212 གང་ཞིག་བྱུང་བྱས་ཚེས་ཤེས་པ།

དེ་ཡི་ལེངས་ཕྱིད་ཟད་མི་ཤེས།

ཚེས་ཤེས་མད་པར་ཚུལ་བ་ལ།

སྤྲུག་བསྐྱུལ་ཆར་བཞིན་ཕྱིད་ཏེ་འབྱུང།

213 གམ་དགས་ཚེ་ན་ལེན་པ་ཡི།

ཀྲ་ནི་ཕྱིན་པར་ཐུབ་པས་གཞུངས།

བསགས་པའི་ཀྲ་ནི་སྤང་ཙ་ལྟར།

གམ་ཞིག་གཞན་ཁྱིམ་ཕྱིད་པར་འབྱུང།

214 འཇིག་རྟེན་འདིར་ནི་བྱན་བདད་བས།

དངས་པའི་ཐོབ་པའི་དེས་པ་མད།

སྤང་ལ་ཐུན་ལ་འབད་མད་པར།

ཆུང་ལང་བཅུ་བཅུར་ཐོབ་པར་འབྱུང།

215 རིགས་པལྱུང་ལྱུང་བྱས་དགས་པས་ན།

ཐོ་ཆུང་ཆུང་ཟད་བཞེད་པ་སྤྲུག།

accustomed to. As we have learned the mechanical arts, we may exercise also virtue (true religion) without difficulty.

212. The wealth of a man, that is contented with little, is inexhaustible. He that seeks always for, and is never satisfied, will have a continual rain of sorrow.

213. Give of the goods that you have received from others, when they have need of them, as Thub-pa (Shākya) has commanded us to do. In the same manner as honey (of the bees), all hoarded treasure will once be enjoyed by others.

214. In this world, it is uncertain, if you lend money, whether you shall have the principal or not, but if you bestow it in alms, though it be small, it will increase hundred-fold.

215. From fearing that his family will be impoverished (thereby)

માત્રા પ' રીત્રા વહ્નિ મર્ષે દેવ ટ્રે ।

વ્યુત્ર વર્ષત વર્ષત વ' ધૃતિ'પ' રત્રે ॥

216 દિ' જીત' ય' મ' સુ' હ્રમણ' પ ।

દે' જીત' સુ' ક્રિ' ય' મ' મિત્ર ।

ય' મ' સુ' ક્રિ' વ્યુદ્ધ' વ્યુદ્ધ' કણ ।

ય' મ' કણ' કણ' સુ' ક્રિ' વ્યુદ્ધ' ॥

217 શ્રે' દરિ' ભે' પે' જીત' પ' કમણ ।

શ્રે' દર' શ્રે' કણ' ક્રિ' જીત' રત્રે ।

કે' શ્રે' કમણ' શ્રે' ક્રિ' વ્યુદ્ધ' રત્રે ।

દે' પ' વર્ષત' ર' વર્ષત' વ' જીત' ॥

218 શ્રે' પ' જીત' રત્રે રત્રે' ક ।

જીત' શ્રે' વ' ભે' ક' ક્રિ' ॥

જીત' વ' રત્રે' વ' દે' શ્રે' કણ ।

વ્યુદ્ધ' વ' શ્રે' પ' મદિ' વ' રત્રે ॥

a narrow-minded man keeps anxiously all the little that he gets. A wise man, to obtain a high rank, bestows his alms, as bribes, on others.

216. As children are loved by their parents, they are not respected in the same manner by their children. After the parents have long cherished their children, when they have grown old, they are despised by them.

217. They that have become the slaves of the world, run after riches, neglecting their own souls. Contented men, though they obtain wealth, give it, as an excellent man does to others.

218. If you fight an enemy, since he does harm to you, subdue your own passions, it is on account of your passions, that, from the beginning, you are wandering in the orb of transmigration; and then you shall be perfectly free from all harm.

219 གལ་ ཏེ་ དག་ རྟེན་ བརྒྱུ་ འདོད་ ཀ །

མཉམ་ པ་ དེ་ རྟེན་ གལ་ འཛིན་ །

འད་ གི་ རྩོ་ བ་ གཅིག་ བཅོམ་ པས་ །

དག་ རྟེན་ གཅིག་ ཅུ་ བཉམ་ པ་ ཡིན་ ॥

220 མཐུ་ ཆེན་ བཟོ་ རྒྱུ་ རྩོད་ པ་ ལ།

ཞེས་ ཀ་ འད་ ལ་ རྩུ་ པར་ གཅིད་ །

དམ་ པ་ ཞེ་ བར་ ཞི་ བ་ ལ།

ཞེ་ བར་ རྩོ་ རྩུ་ ག་ ལ་ ཡོད་ ॥

221 རྩོད་ པེ་ གཅིག་ ལ་ རྩོས་ པ་ ཡི།

མ་ ཀམས་ རྩོད་ གིས་ རྩོས་ བརྒྱུ་ འཕྲོལ་ །

དེ་ བཞིན་ རྩུ་ ཅིག་ རྩོས་ པ་ ཡི།

རྩོ་ བེ་ ལས་ རྩོས་ སེ་ སེལ་ འབྲུག་ ॥

222 འད་ འདོད་ འབད་ པ་ས་ བརྩུ་ བ་ འདོད་ ཀ །

དེ་ ཡིས་ དད་ པལ་ གཞན་ དེན་ བརྩུ་ བ།

འད་ དེན་ འབད་ ཞིག་ གཅིལ་ རྩོད་ པ།

དེ་ ཡིས་ འད་ དེན་ འབྲུག་ མི་ རྩོད་ ॥

219. If you will destroy all your enemies, you never shall be at an end with killing them. But if you have subdued only your own passion, you have at once destroyed all your enemies.

220. If you are angry with a powerful mischievous man, you hurt the more your ownself. What reason have you to be angry with a virtuous and very sedate man ?

221. Herbs, that grow on the same stubble, are dispersed by the wind into the ten corners (of the world) thus men, that are born together, are separated by the effects of their moral works.

222. If you will earnestly obtain your own concern, first seek that of others. He that seeks only his own concern principally, it is impossible, that he should succeed in-obtaining his own purpose.

- 223 གྲུག་ པོ་ མི་ སྒྲོལ་ ངོ་ མཚོར་ འཛིན།
 མཁས་ པ་ སྒྲོལ་ པ་ ངོ་ མཚོར་ འཛིན།
 དེས་ ཀ་ མཁས་ པ་ ཅིས་ ཐུང་ བྱུང་།
 ཐུ་ མའི་ དོན་ ཅུ་ རྒྱ་ པ་ སྒྲོལ་ ॥
- 224 ཞལ་ རྩ་ མེད་ པའི་ ཐུ་ མཚོན་ ཐུས།
 གྲུག་ པོ་ ཡོན་ དན་ མ་ སྒྲོལ་ པོ།
 བརྟམས་ ཀ་ ཞལ་ རྩ་ མེད་ བཞུང་ ཐུས།
 གྲུག་ པོ་ འབད་ ཅིས་ སྒྲོལ་ རོལ་ ལོ།
- 225 ཐུ་ བ་ ལྷ་ མ་ མ་ བསྐྱབས་ པས།
 ཚེ་ འདིར་ གྲུག་ པོར་ མཐོང་ ཅིས་ ཀི།
 ཐུ་ མ་ གྲུག་ པོར་ ཐུ་ དོན་ པ།
 ཚེ་ འདིར་ རལའ་ ཡང་ འབད་ པས་ བསྐྱབ།
- 226 སྒྲོམ་ ལ་ ཐེས་ པ་ མི་ དཔོན་ ཞེས།
 གྲུག་ པོ་ སྒྲོ་ ཐུ་ ཅུང་ ཅུ་ སྤ།
 ཐོས་ པ་ མེད་ པའི་ སྒྲོམ་ པ་ དེ།
 འབད་ བྱུང་ ཅུང་ འབྲེལ་ སྒྲུབ་ ཐབས་ ཡིན།

223. A foolish man will not learn, and takes every thing for a miracle, a wise man after having studied, admires every thing. Therefore a wise man, though grown old, acquires knowledge for his future state.

224. The fool seeks not to acquire science, since he says, he has no mind of understanding; but if he would well consider, he should endeavour for this reason to learn to improve his understanding.

225. One that has not learned in his former birth, is ignorant in the present life. He that is afraid to be born again ignorant in the next world, though it be difficult, must study assiduously in this life.

226. Meditate, there is no need to learn by hearing, thus says the narrow-minded fool. Contemplation without previously hearing (experimental learning) though it be diligently pursued, is the way of preparation of a beast.

- 227 ଶ୍ରୁ ଉପାସା ସଂସ୍ଥା ସା ଶେଦା ପା ଦି ।
 ପ୍ରାୟାସ ଧନ ଶାନ୍ତିକ ପରି ଶ୍ରଦ୍ଧା କର୍ତ୍ତବ୍ୟ ।
 ଶା ସଂସ୍ଥାସା ପା ଧା ଶ୍ରୁତ ଶାନ୍ତିକ ଓ ।
 ଉତ୍ତର କ ଶ୍ରୁ ଉପାସା ଶା ଧା ସଦା ॥
- 228 ପ୍ରାୟାସ ପା ଶେଦା ପରି ସ୍ଥଳ ପା ଦି ।
 ଧି ଶିବା ଶ୍ରୁତା ଶ୍ରଦ୍ଧା ଧ୍ରୁତ ଓ ଉତ୍ତର ।
 ଶାନ୍ତିକ ଦକ୍ଷିଣା ଶିବା ପା ସଦା କ ଧା ।
 ଶେଦା ଦା ସଦା କ ଧା ସା ଧ୍ରୁତ ॥
- 229 ଶାନ୍ତା ଧା ଶ୍ରେ ଶ୍ରେ ଶ୍ରେ ଶ୍ରେ ଧା ।
 ସଂସ୍ଥା ସଂସ୍ଥା ଶିବା ଶ୍ରଦ୍ଧା ଧ୍ରୁତ ଶିବା ଶିବା ।
 ଶ୍ରଦ୍ଧା ଶ୍ରଦ୍ଧା ଧ୍ରୁତ ପରି ଶାନ୍ତିକ ଶ୍ରଦ୍ଧା ।
 ଶାନ୍ତିକ ଶ୍ରଦ୍ଧା ସା ଧା ଶା ଧା ସଦା ॥
- 230 ଶାନ୍ତିକ ପା ଶାନ୍ତିକ ଶ୍ରଦ୍ଧା ଶିବା ଶ୍ରଦ୍ଧା ।
 ଶାନ୍ତିକ ଧ୍ରୁତ ସଦା ପା ଶା ଶ୍ରଦ୍ଧା ଧ୍ରୁତ ।
 ଦି ଦି ଶାନ୍ତିକ ଧ୍ରୁତ ଶା ଶିବା ଶିବା ।
 ସଂସ୍ଥା ସଂସ୍ଥା ଶିବା ଶ୍ରଦ୍ଧା ଶିବା ଧ୍ରୁତ ॥

227. How would this infallible doctrine be true, that it is perfection in knowledge, by which the all-knowing differs (from others). If you should become all-knowing without learning ?

228. Meditation without hearing (learning) though it succeeds for a while, but will soon fail afterwards. You may melt well gold and silver, but if you take away the fire, they grow hard again.

229. He that wants understanding, though a literary work be a good composition, will not take it. Though an ornament of gold, beset with jewels be beautiful, yet would any ox look on it ?

230. To know well that it is very true, what is expressed in the elegant sayings of learned men : if you will not understand and practise them, to what use is your knowledge of the shastras ?

231 ਸ਼੍ਰੋਂ ਭੂਕੰ ੲਦੰ ਈਸੰ ਐਸੰ ਕੰ ਘਦੰ ।
 ਮਾਠਸੰ ਪਰੰ ਗਰੁਦੰ ਸੁਭਾਸੰ ਰੇਭਾਸੰ ਪੲੰ ਵਭੁ ।
 ਤ੍ਰਿਕੰ ਕੇਕੰ ਈਕੰ ਭੁੰ ਵਤ੍ਰਦੰ ਕੰ ਘਦੰ ।
 ਮੰ ਵਤ੍ਰੇਸੰ ਪੲੰ ਤੁੰ ਤ੍ਰਿਕੰ ੲਦੰ ਕੁਦੰ ॥

232 ਕਥਾਸੰ ਕੰਰੁੰ ਈਕੰ ਭੁੰ ਮਦੰ ਕੰ ਘਦੰ ।
 ਤ੍ਰਿਕੰ ੲਕੰ ਸੰ ਮਕੰਭਾੰ ਸ਼੍ਰੋਂ ਵੰ ਗੁਦੰ ।
 ਦੇਂ ਵਧਿਕੰ ਮਾਠਸੰ ਪੰ ਮਦੰ ਕੰ ਘਦੰ ।
 ਰੇਭਾਸੰ ਵਧਦੰ ੲਤ੍ਰੁਦੰ ਵੰ ਈਕੰ ਭੁੰ ੲਯੋਕੰ ॥

233 ਫੰ ਮਕੰਭਾੰ ੲਥੇਂ ਵੲੰ ਕੰ ਕੰ ਐਸੰ ।
 ਗਯੇੲੰ ੲਤ੍ਰੁਰੁੰ ਵਤ੍ਰੁੰ ਕਸੰ ਐਸੰ ਪੲੰ ੲਤ੍ਰੁੲੰ ।
 ਸ਼ੁਦੰ ਕੇਕੰ ਗਘ੍ਰੁਰੁੰ ੲੲੰ ਐਸੰ ੲਤ੍ਰੁੲੰ ੲੇ ।
 ਮਾਠਸੰ ਪੰ ਰੇਭਾਸੰ ਵਧਦੰ ਸ਼੍ਰੋਂਮੰ ਕੰ ਐਸੰ ॥

234 ੲਵੰਭਾੰ ਤ੍ਰਿਕੰ ਭੁੰ ਵੰ ਰੇਭਾਸੰ ਐਸੰ ਪੰ ।
 ਦੇਂ ਘੰਸੰ ੲਮੰ ਪਰੰ ਕੰਰੁੰ ਸੁਭਾਸੰ ੲਤ੍ਰੁਵੰ ।
 ੲੇਸੰ ਕੰ ਕੰਰੁੰ ਸੁਭਾਸੰ ਸ਼੍ਰੇਂਦੰ ਪੰ ੲੇ ।
 ਭੁਦੰ ਕੁਵੰ ਰੇਖਾਸੰ ੲਪਰੰ ਕੰਮੰ ੲੲੰ ਘੰਕੰ ॥

 ਕੰਰੁੰ ਵਧੰਭਾੰ ਪੰ ਸ਼੍ਰੇ ।

231. Though an intelligent man knows by himself also, yet he peruses the text-book (composition) of a learned man. Though precious metal is very fine, yet it has less price, till it has not been wrought up.

232. Though there be many forests, yet very scarce is the spot, where the Sandal-tree grows. Thus also, though there be many learned men, yet elegant sayings seldom are to be found.

233. Gold and silver are known when they have been melted. An elephant's goodness will appear in the field of battle. A learned man may be judged by his composition of elegant sayings.

234. He that is acquainted with the manners of the world, will exercise true religion. Therefore he that practises good morals, is the living biography of a saint.

Note.—The numbers omitted in this last enumeration have not been translated now. The whole work consists of 454 Ślōkas.



LUBHEE & PORTHAIT

Notes on a forest race called Puttooas or Juanga, inhabiting certain of the Tributary Mehals of Cuttack.—By E. A. SAMUELLS, Esq.
B. C. S. Superintendent of the Tributary Mehals.

In the 248th Number of the Journal, there appeared an interesting memorandum by Mr. Piddington on two individuals of an unknown forest race, supposed to inhabit the jungles south of Palamow. I think it not improbable that the persons who are there described may have belonged to the forest race, called Puttooas, which inhabits the jungles of the Tributary Mehals to the South of Singbhoom, and that the female had, from motives of convenience or from fear of pursuit, abandoned the peculiar dress, which ordinarily distinguishes the women of the tribe.

These Puttooas are very little known even to the inhabitants of Cuttack. Mr. Sterling does not notice them in his History of Orissa, and the only mention I have found of them in any publication is contained in a short paragraph of a Report by Mr. Mills on the Tributary Mehals of Cuttack, which was published in the 3rd Vol. of the "Selections" of the Bengal Government. Some account of this peculiar people will not therefore, I presume, be unacceptable to the members of the Society.

I first met with the Puttooas at the Killah of Dhekenal in 1854. I saw another large party of them in the Hindole Killah last year, and a few weeks ago I visited a Puttooas village near Bhapore, on the Ungool road, in company with my friend Major Strange of the Trigonometrical Survey, to whose graphic pencil the Society is indebted for the spirited and life-like sketches which accompany these notes. My information regarding the habits and customs of the tribe is derived chiefly from the Puttooas themselves, but to some extent also from the Dhekenal Rájáh, to whom I sent a paper of queries last year on the subject.

The Puttooas are scattered over the Tributary Mehals (or Killahs as they are frequently called) of Keonjur, Pal Leyra, Dhekenal and Hindole. In Dhekenal, they are said to number one thousand and five persons of all ages and sexes, inhabiting fifty-eight different localities. Their numbers in the other Mehals I have not been able

to ascertain with any certainty. It is commonly supposed, however, that they occupy about thirty villages in Keonjur, and six or seven in Pal Leyra and Hindole.

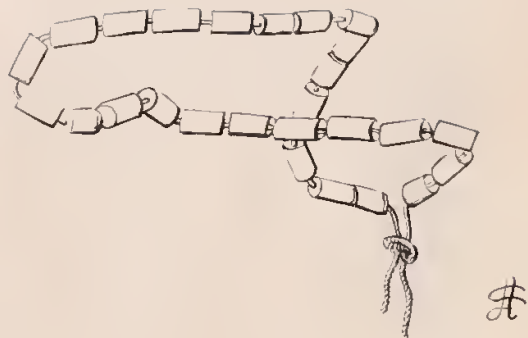
In appearance, the Puttooas differ materially from the Oorians, in whose neighbourhood they are found. Their stature is diminutive not exceeding apparently 5 ft. 2 in. the males, and 4 ft. 3 or 4 in. the females. Their forms are slight with very little muscular development and their physique seemingly weak. There is of course, a great variety of physiognomy apparent amongst them, but I remarked, as a general characteristic which rarely failed, that the face was broader and shorter than in the Ooriah, and that the nose was flat with wide nostrils. Their colour is not darker than that of the Ooriah peasant.

The men are far from being handsome, but the palm of ugliness must be awarded to the women. I must have seen altogether about forty or fifty of the Puttooas women, old and young, and I did not observe one who was not repulsively ugly. It was evident from what we saw in the village which Major Strange and I visited, that all the drudgery of the household devolved upon the women; and to this, and their constant exposure, may partly be attributed the coarseness of feature, which distinguishes them; they seemed to us, however, to be also insufficiently fed. Their persons were generally spare and emaciated, while the men, for the most part, appeared to be in good condition.

The dress of the men is the ordinary one of the native peasantry, but the women wear no clothes whatsoever. Their sole covering consists of two large bunches of leaves (or rather of twigs with the leaves attached) of which one is worn in front and the other behind. The twigs are sometimes fastened together by a strip of bark, but are more generally loose, and are kept in position by a string of glazed earthen-ware beads passed twenty or thirty times round the waist and over the stems of the twigs. It is from this original costume that the tribe have obtained from their neighbours the name of Puttooas—quasi *the people of the leaf*. They call themselves Juanga. The leaves which I observed in use were those of the sál, the jamoon, the koorye, and the chaldua, but I was told that the leaves of the bur, the peepul, the mhowa and the kendooa, in fact



EAR AND HAIR ORNAMENTS



SPECIMEN OF THE BEADS OF WHICH THE GIRDLE IS COMPOSED

all large and smooth leaves are used indifferently. These leaves are changed daily, and are generally in consequence clean and fresh-looking.

No covering is worn on the upper-part of the person ; but most of the females I have seen had necklaces of coloured earthenware beads (made by themselves they told me) which hung down to their waists in numerous folds ; and nose, ear, and hair ornaments, sketches of which will be found in the accompanying engravings, were common amongst them.

Their hair was generally of the shock order, but was gathered rudely into a knot at the back of the head, and fastened by a string terminating at each end in a silver or brass button.

No blanket or other covering, I was assured, is permitted to these women at night, and their only remedy against the extreme cold which often prevails in the hilly region they inhabit, is to sleep between two fires.

The origin of the strange costume they have adopted, was thus described to me by the different parties of Puttooas, whom I questioned. Many ages ago, they said, the women of the tribe, being much given to fine clothes and naturally averse to soiling them, fell into a habit of dressing themselves in leaves whenever they had occasion to clean out the cow-houses or to perform any other menial office. On one occasion when thus employed a Thakoorani (Seeta some said, but the majority did not seem sure of her name) appeared to them and commanded them as a punishment for their pride, never again to wear clothes, or to appear in any other dress than that in which they then stood. Should they violate this command, they firmly believe that they would sooner or later be devoured by tigers. In Keonjur, I am told by Dr. Short of the Madras Army, who has lately visited that Killah, that the legend is somewhat differently told, and that the dress is said to be worn in obedience to the commands of a Rishi. The same belief, however, appears to prevail in Keonjur as in Dhekenal, on the subject of the penalty which awaits those who presume to discard their present sylvan attire, and it is probably owing to the dread which this belief inspires, that even children of an age at which Ooriah girls usually go naked, are made to wear their little apron of leaves.

The effect of such a costume on the spectator who sees a woman rustling along in it for the first time, is, as may be supposed, ludicrous in no ordinary degree, but it is in the dance that its absurdity is most conspicuous. The Puttoo women are in the habit of dancing in a circle to the noise of a large drum beat by the men. They move round and round in the same measured step, occasionally advancing towards the musicians and then retreating, the body bent forward in what the Melbourne Secretary would call, a recumbent posture, the left hand holding the end of the necklace and the right hanging down. In this position, it will be readily understood the stiff bundle of twigs in front necessarily presses inconveniently against the legs. It is therefore, disposed of by being thrust between them. This again as a natural consequence raises up the branch behind, the limp ends of the twigs go bobbing up and down with the motions of the dancers, and when fifteen or twenty women are attitudinising together, the scene becomes as grotesque, as it is possible to conceive. The accompanying sketch gives an excellent idea of it. The attitudes are not in the least exaggerated.

Of the history of their tribe the Puttooas know little. Some of them informed me that the Tributary Mehal of Keonjur was the original seat of their race, but the majority seemed to have no idea that their ancestors had ever resided in any other lands than those they now occupy.

Their villages are small, seldom containing more than six or eight families. Their houses are of the same material as those of the peasantry around them—thatched huts of wattle and dab, but they are poor and mean in comparison. I found there was a belief among the people of my office that the sexes occupied separate houses in the villages, but this is certainly not the case. Each family appeared to have its own dwelling. The site selected for the village is generally some opening in the forest. The one which I visited in company with Major Strange was situated in a very pretty spot on the skirt of the jungle whence the eye wandered over a small cultivated valley—the out-fields of a distant Ooriya village—to the huge mass of the Satsujea mountain, which threw the shadows of its peaks across from a height of some 1800 feet. The village itself was simply a small square surrounded by six miserable looking



BALLET PUTT-OESQUE



huts, the whole not larger than the house of a flourishing Ooriya ryot.

The Puttooas do not themselves own land, although they sometimes, we were told, assist in its cultivation. Their pursuits are chiefly those of the chase. They use the bow and arrow, and hunt with dogs, killing deer, hogs, and not unfrequently snakes, of the flesh of which and especially of that of the *Python molurus* they are very fond. They appear to be nearly omnivorous, nothing coming amiss to them except cow's flesh, from which they probably abstain either from fear of the Hindu Rájáhs, in whose territories they live, or out of deference to the prejudices of their Hindu neighbours. Their usual food, however, consists of roots and the seeds of jungle grasses. We found three different kinds of roots in their houses which were called by our Ooriya attendants *toonga*, *kurba* and *panee aloo*. We took some specimens of each to camp and had them cooked for dinner, but the experiment was not encouraging. Without being absolutely nauseous, they were all insipid and had an earthy flavour which was decidedly disagreeable.

No distinctions of rank exist among these people. One and all call themselves Pudhan, the title which the Ooriyas give to the headman of a village. Thus the husband of Kumlee, that most uncomely damsel who stands in the sketch with head averted, looking, as she did in truth, the very picture of sulkiness, is called Mootee Pudhan, and so on with the happy owners of the other ladies who sat for their portraits. They have no distinction of castes. Some of them told us indeed that they should object to eat with low caste Hindus, but this of course was a mere piece of bravado, intended for the ears of the Hindus who were with us; as no Hindu, however low his caste, would consent to join in their meals.

They pay no rent to the Rájáhs on whose lands they live, but they are expected to furnish him, when required, with spirits manufactured from the flowers of the mhowa and with the honey of the wild bee. They are forced also to carry his baggage when he marches through his estate, and to assist on the occasion of his hunting excursions in beating the forest.

The Dhekenal Rájáh declares, that the Puttooas are Hindus, and that they make offerings to the village deities, but although, as may be

seen from the legend by which they account for the peculiar costume of their women, they appear to recognise the existence of the Hindu deities as beings capable of exercising an influence over their actions, they uniformly denied to me that they worshipped any deity or paid respect to any image whatsoever. There were certainly no images of any kind in the vicinity of their huts, and they have no priesthood among them. Their religious homage they assured us was confined to the nameless spirits which they believe inhabit the woods and mountains. When they find a wild grape vine or a wild plum tree more than usually fruitful, or when they chance upon a spot rich in the roots or grasses upon which they subsist, they make an offering to the genius loci of a fowl, a goat, or a little rice and spirits, and address to him a prayer in which the terror which overshadows the lives of this forest race finds touching expression. "Lord, let the bears and the tigers flee when they see us. Let them not meet us." The only festival of a religious character, which they appear to have, occurs in the month of Bysakh, when they offer sacrifices and pour out libations to the manes of their deceased ancestors. They bury their dead, and, as far as I could learn, without any ceremonies worthy of note.

Marriages are arranged by the parents of the parties and are scenes of revelry and drunkenness. On these occasions all the members of the tribe within a reasonable distance assemble at the bride's house and escort her with music, and dancing to the house of the bridegroom, where the women wash her feet in water tinged with turmeric, after which the elders of the community perform the marriage ceremony. This consists, apparently, in each elder laying his hands in succession upon the heads of the bridal pair, and in tying their thumbs together with a thread. A grand feast ensues, in which the men and women eat apart from each other, and the night is afterwards spent in dancing and drinking. The festivities continue for three days. If the first wife prove unfruitful, the husband is at liberty to take another, otherwise they adhere to one wife. The husband, we remarked, has the same objection to mention his wife's name, that is observable amongst the Hindus. Not being aware of the relationship of Kumlee to Mootee Pudhan, we asked the latter, what her name was, and could not account for his

embarrassed look until we learnt from another Puttoo, that she was his wife.

The Juanga language bears no resemblance to Ooriya or to any other dialect with which I am acquainted. A list of words and phrases, which I have collected, is, however, given below, and those members of the Society who are familiar with the dialects of the Coles, Santáls, Goands, Sowrahs, and other hill tribes to the North and West of the Tributary Mehals, will be able to say whether the Juanga bears an affinity to any one of these, or is, as the tribe themselves assert, a totally distinct language. In the latter case, we must suppose that the Juangas are the remnant of a people vastly more numerous than their descendants. It is scarcely possible that a race so numerically weak and scattered over such a limited area, should have originated anything more than a dialect of some one of the languages, spoken by the more powerful tribes in their neighbourhood. I imagine, they will prove to be merely an offshoot from one of the great forest races which have, for centuries, if not for ages, inhabited the mountainous region which extends from Mirzapore to the shores of the Bay of Bengal. Had they ever formed a race of any importance, their peculiar habits could hardly have failed to attract attention, and to have been chronicled among the marvels of the East. Our knowledge of the hill and forest tribes of India is still, however, to our shame be it said, very imperfect, and it is quite within the bounds of possibility that Juangas or other people bearing a close affinity to them may hereafter be found in localities far distant from the Tributary Mehals of Cuttack.

Since writing the above my attention has been drawn by a Madras friend to the Coorumbos of the Wynaad forest, in Malabar, and the Chenchoos of the Masulipatam and Guntoor jungles, as tribes whose women are said to adopt a similar costume to the Juangas, and the following extract has been sent me from Pharaoh's Gazetteer, p. 546. "Twenty years ago, the females of a degraded caste of Holiers, used to come into Mangalore with no other covering but some thick branches of a bush tied to their waist in front, and the same behind. They have now substituted a cloth for the leaves in front." It would be interesting to ascertain whether the resemblance between the Juangas and the tribes mentioned above, is confined to

the dress of the females, or whether it does not extend also to language and customs. In the former case, it would be tolerably certain, that these forest races have sprung from outcaste or persecuted tribes, which have, at various times, been driven to the jungles, and have naturally enough without any knowledge of each other, adopted a covering of leaves from inability to procure a more convenient material; in the latter, an additional argument will be afforded for the popular belief, that the hill and forest tribes are the aborigines of India, and we shall have gained an important step in our knowledge of the geographical distribution of these little known races.

Vocabulary.

<i>English.</i>	<i>Juanga.</i>
Fire,	Nélye.
Water,	Da or Dagé
Earth,	Nuttub.
House,	Heea.
Man,	Moolusso.
Woman,	Khemé chélo or Juangurrakee.
Child,	Hooale kee.
Boy,	Koosnunde.
Girl,	Korchetán.
Tree,	Seemsee.
Food,	Moorke Lukooa.
Stone,	Oola.
One,	Minna.
Two,	Bana.
Three,	Teelooko.
Four,	Chalooko.
Ten men,	Dench dik.
Cow,	Oopye.
Tiger,	Keelo.
Horse,	Ghorardendite.
Rice,	Runkoo.
Sun,	Béló.
Moon,	Nerango.
We are,	Aynde asike.

<i>English.</i>	<i>Juanga.</i>
You are,	Ramde masíké lokéra.
I am,	Aynde asike.
To give,	Dinkee mintuk.
To come,	Mendeldul koa
To go,	Heena daee.
Mother,	Byee.
Father,	Báa.

*On the origin and progress of writing down historical facts among
the Musalmans.—By Dr. A. SPRENGER.*

There has been a time, when every Arabic, Persian or Turkish work containing the history of Mohammod and of his successors, or any part of the history of the East—even if it referred to the antediluvian period—was considered as a source of information, the authenticity of which was above all doubt or question. It is superfluous to show how uncritical such a proceeding is, and how much wiser it would be for the historian to leave blanks in the chronicles of this world, than to fill them up with such uncertain materials. I believe, I was the first writer who attempted to submit the sources of the biography of the prophet of the Arabians, to a critical enquiry, in my *Life of Mohammod*, Allahábád, 1851. The nature of the book did not enable me to enter so fully upon the subject, as it appeared to me to be necessary, nor was I then in possession of the materials which I required for the purpose. Since then, it has been my good fortune to be able to make a more complete collection of works bearing on this subject, and on cognate matters than there exists any where else, and it is therefore, in my power to throw light on some of the details connected therewith, which I then considered to be involved in great and hopeless obscurity.

The first question which a philosopher would ask of an Arabist who talks of original works on the biography of Mohammod, is probably this: When was the first biography written? He would answer, that the earliest work which we possess is that of Ibn Ishák, who died 141 years after Mohammod. An age in which a religion

can develope itself against the truth of which we entertain doubts, must be stronger in faith than in reasoning, and we might expect that in 141 years, a number of fables would grow up regarding its founder among his followers. The philosopher would therefore, probably question our Arabist: Whence has Ibn Ishák derived his information? Had he any written records or only traditions? I venture to assert, that none of the orientalisists, who, previously to myself, have written on the Life of Moḥammad, was prepared to give a reply. Our Arabist would probably have said, the records consisted of traditions. And as he himself as well as every body else would have taken "traditions" in our own sense of the word, he would have been totally wrong, because there is a wide difference between "*hydyth*" and what we call "tradition;" though the former, for want of a better term, is usually translated by the latter.

Before we can answer the question "had Ibn Ishák merely oral sources of the biography of Moḥammad or written ones?" it is necessary to show whether the Moslims, during the first century after the Hijrah, did write books at all. With a view of throwing light on this question, I give here an abstract of a very important monography of the Khatyb Baghdády (d. 464 or 465) which is entitled *تقييد العلم* and consists of 180 pages.

I.—*Sayings of Mohammad, from which it appears that he did not approve that his followers should take his sayings to paper or have any other book but the "Book of God."*

1. لا تكتبوا عني شيئا سوي القرآن وقال الصغاني غير القرآن ثم اتفقا فمن كتب عني غير القرآن فليمحاه

"Do not write down any of my words, except the Qorân. (In the text of Çaghány is "besides the Qorân," in what follows both texts agree). Any one who has written down sayings of mine besides the Qorân is to expunge them."

In two versions of this *hadyth* of Abú Sa'y'd Khodry is added "and he that says intentionally a falsehood on any authority, will find a place in fire."

2. قال [ابو سعيد الخدري] استأذنت النبي ان اكتب الحديث فابي ان ياذن لي

"Abú Sa'd Khodry, (d. 74,) relates, I asked permission of the prophet to write down *hadythes* (i. e. his sayings and life) and he refused it."

This *hadyth* is also in Bokhary, and there is one version of it which runs “we asked him” and “he refused us.”

3. قال [ابو هريرة] خرج علينا رسول الله صلى الله عليه وسلم ونحن نكتب الاحاديث وقال ما هذا الذي تكتبون قلنا احاديث نسمعها منك قال كتاب غير كتاب الله اندرون ما ضل الامم فبلكم الا بما اكتبوا من الكتب مع كتاب الله قلنا انحدث عنك يا رسول الله قال حدثوا عني ولا خروج ومن كذب على معتمدا فليتبوا مقعده من النار

“Abú Horayrah says: The prophet came out to us and found us writing *hadythes*. He asked us: What are you writing? We answered, *hadythes*, which we hear from you. He observed: You are writing a book, besides the book of God? Do you not know that it is writing books besides the book of God what has led the people before you astray. We enquired: Shall we relate *hadythes* of you, O prophet of God? and he replied: You may relate *hadythes* of me, there is no harm. But he that says intentionally a falsehood on my authority, will find a place in fire.”

In one version of this *hadyth* is added: Then, says Abú Horayrah, we made a heap of our writings and burned them فجمعناها في صعيد واحد فالقيها في النار.

4. دخل زيد بن ثابت على معاوية وسأله عن حديث فامر انسا ان يكتبه فقال له زيد ان رسول الله صلى الله عليه وسلم امرنا ان لا نكتب شيئا من حديثه صحاح

“Zayd b. Thábit paid a visit to the Khalif Mo’áwiyah, and he asked him for *Hadythes*, and ordered a clerk to take them down. Zayd observed: The prophet has commanded us not to write down any of his *Hadythes*. Upon this he expunged what had been written down.”

II.—*Sayings and examples of companions of Mohammad showing that it is not lawful to commit hadythes to writing.*

5. قال [ابونضرة] قلنا لابي سعيد لو كتبتم لنا فانا لانسخط قال لانكتبكم ولا نجعلها مصاحف كان رسول الله يحدثنا ونحفظ فاحفظوا عنا كما كنا نحفظ عن نبيكم

“Abú Nadhrah relates, we said to Abú Sa’yd Khodry, It would be a grand thing if you were to write down *hadythes* for us, we cannot recollect them. He replied, We will not write them down for you, nor shall we collect them in books. The prophet com-

municated them to us orally and we impressed them in our memory, you must do the same."

There is a more simple and apparently more correct version of this *hadyth* extant, it runs: "We said to Abú Sa'y'd, write down these *hadythes*," and he replied: "We will not write them down. Take them from us as we have taken them from the prophet."

In another version Abú Nadhrah informs Abú Sa'y'd that they have written down *hadythes*, and he ordered them to expunge them.

6. حدثنا فلان عن ابي الشعثا المحاربي ان بن مسعود كره كتاب العلم

"Abú Sha'tá relates that 'Abd Allah b. Mas'úd disapproved of writing down *hadythes*."

7. عن الشعبي عن عبد الرحمان بن عبد الله بن مسعود قال كنا نسمع الشيء فنكتبه فظن لنا عبد الله فدعا ام ولده و دعا بالكتاب و تاخذته من ماء فغسله

"It is related by Sha'by (d. 105) that 'Abd al-Raḥmán, (d. 79) the son of 'Abd Allah b. Mas'úd said, that he (and others) were in the habit of writing down *hadythes* which they heard. 'Abd Allah (d. 32) observed it. He called a slave woman, who was his concubine, and he sent for our writings, and when she had brought him water, he washed them out."

8. حدث بن مسعود بحديث فقال ابنه ليس كما حدثت قال وما عليك قال كتبته قال فهلم الصحيفة فحيا بها فمحاها

"Ibn Ma'súd related a *hadyth* and his son observed, You are not correct. The father asked, How do you know it? The son answered, I have written it down. He ordered him to bring the roll and effaced it."

9. قال [ابو بردة] كتبت عن ابي كتبنا كثيرة فمحاها فقال خذعنا كما اخذنا

"Abú Bordah (d. in 103) relates, I filled several volumes with *hadythes*, which I had heard from my father Abú (Músà Ash'ary, d. in 42 or 52). He destroyed my writings, and said, Take the *hadythes* from us in the same manner as we have taken them."

Another version of this *hadyth* is, that Abú Bordah and a freed slave of his were in the habit of writing down the *hadythes* which they heard from Abú Músà. When he observed it, he washed out their writing, which was probably on Gazelle skins or parchment. In another version occur the words *كنت كتبت عن ابي كتابا* "I filled a book with what I heard from my father."

10. "Sa'yid Ibn Abú-l-Hasan says, that none of the companions of the prophet knew a greater number of *hadythes* to relate than Abú Horayrah. When Marwán was governor of Madynah and affected with paralysis, he desired him to write them down, Abú Horayrah refused compliance saying, Transmit them as they have been transmitted to us. One day when he was off his guard he sent for him having previously directed a clever and trustworthy penman to be in attendance. Abú Horayrah related all his *hadythes* and the penman wrote them down. When he had done, Marwán said, Do you know that we have taken down your *hadythes*? Indeed! replied Abú Horayrah. Abú Horayrah desired that they should be read to him, and then he said, You now know them by heart and he effaced them."

11. قال [ابو كثير] سمعت ابا هريرة يقول ان ابا هريرة لا يكتب ولا يكتب
 "Abú Kathyr relates, I heard Abú Horayrah say, I neither conceal a *hadyth* nor do I write one down."

12. قال [طاوس] ان كان الرجل يكتب الي ابن عباس يسئله عن الامر فيقول للرجل الذي جاء اخبر صاحبك ان الامر كذا وكذا فانا لا نكتب في الصحف الا الرسايل والقران

"Tāwus relates, A man was in the habit of writing to Ibn Abbās to enquire of any matter he wanted to know. Ibn 'Abbās said to the messenger, Tell your master, the answer to the question is such and such, and that we only write letters and the Qorān."

There are two other versions apparently of the same story: "Tāwus relates, We were with Ibn 'Abbās; and Sa'yid b. Jobayr wrote down [his lecture]. They said to Ibn 'Abbās, They are writing. He stood up (went away) and said, If he was not a well behaved man, I should have done something severer than merely getting up." The other version runs: "When Ibn 'Abbās was blind, people from the 'Irāq made enquiries of him and wrote down what he said. There came a man of the 'Irāq, and Ibn Abbās did not open his lips until he had left his presence."

13. عن سعيد بن جبیر ان ابن عباس كان ينهى كتاب العلم

"Sa'yid b. Jobayr (d. 95) states that Ibn Abbās used to interdict the writing down of *hadythes* (and laws)."

14. قال [سعيد بن جبیر] اذا كنا اختلفنا في الشيء كتبته حتي القى به ابن عمرو لو يعلم بالصيغة معي لكان الفیصل بيني وبينه

“Sa’yd b. Jobayr relates, If we differed on a point, I wrote it down with a view of asking the son of the Khalif ‘Omar. But if he had known that I have any notes with me, our friendship would have been at an end.”

III.—*Sayings and examples of Tábies (i. e. persons of the first century who did not know Mohammad) who disapproved of writing.*

15. Ya’qúb b. ‘Abd al-Rahmán states that his father related to him, I was present when ‘Obayd Allah b. ‘Abd Allah paid a visit to the Khalif ‘Omar b. ‘Abd al-‘Azyz. The Khalif kept people in readiness who took down [the *hadythes*] he repeated. When he was leaving, ‘Omar said to him, We have done something. ‘Obayd Allah asked, What? ‘Omar replied: We have written down all that you related. He asked, Where are the writings? and when they were brought to him he tore them up.

16. Mohammad relates, I asked ‘Abydah, Shall I write down what I hear from you, and he answered: No. And then he said, I have found a book, shall I read it? and he answered: “No.” In another version there is, “If I should find a book shall I read it before you?” instead “I have found a book, &c.”

Mohammad (the Shaykh of Ibn ‘Awn) relates also, “I said to ‘Oyaynah, Shall I write down what I hear?” ‘Oyaynah answered, “No.” Then he said, I have found a book, shall I read it? He replied, “No.”

17. Idrys b. Idrys relates: My father asked me: “Do you write down any of the *hadythes* I tell you.” I answered: “Yes.” He ordered me to show him my writings and tore them up.

18. حدثنا وكيع عن شريك عن مغيرة عن ابراهيم قال كنت اكتب عند عبيدة فقال لا تجلدن عني كتابا

Ibráhyim relates, “I used to write when I attended the lectures of ‘Abydah,” and he said: “Do not make a book of them.”

The expression which is of interest to us in this *hadyth*, and which proves that they made a wide distinction between notes and a book is repeated in another *hadyth*, in which Ibráhyim, imitating the example of his teacher, cautions his pupils against collecting his *hadythes* in a book: حدثنا محمد بن سعيد الاصبهاني قال اخبرنا

شريك عن مغيرة عن ابراهيم قال لا تجلد عني كتابا

قال [سفيان] قيل لعمرؤ ان سفيان يكتب فاصطجع وبكى وقال

أخرج علي من يكتب عني قال سفيان وما كتبت عنده شيئا كذا نحفظ

“Sofyán relates: Some body said to ‘Amr, Sofyán writes down [your lectures]. ‘Amr laid down and cried, and said, I will teach any one manners who writes down from me (i. e. my lectures). Sofyán maintains that he did not write down any *hadythes* whilst he attended his lectures, but he asserts, It was our habit to impress them in our memory.”

20. Abú Bakr b. ‘Abd Allah sent to Ibn Aby-l-‘Aliyah, requesting him to write a *hadyth* down for him. Instead of answering he came himself to him and said: If I was writing down [*hadythes*] for anybody, I would do it for you. He repeated the *hadyth*, and Abú Bakr impressed it in his memory.”

21. قال الضحاك لا تتخذوا للحديث كرايس ككرايس المصاحف

“Dhakhák said, Do not collect the *hadythes* into regular books like the Qorân.”

The word employed for books in this *hadyth* is Karrás, which means a fasciculus of ten leaves or twenty pages. Among the Arabs books consist of such fasciculi which are frequently not bound together, but kept loose in a port-folio, in order that several persons can at the same time read the book. There is another *hadyth*, in which this term is used. It is said of Layth that he disapproved of Karráses قال حدثنا وكيع قال حدثنا حسن عن ليث انه كره الكرايس.

22. عن ابي معشر عن ابراهيم انه كره ان يكتب الاحاديث في كرايس

“Ibráhyim disapproved that *hadythes* be written into Karráses.”

Of this *hadyth*, two other versions are extant, viz.: عن ابراهيم ان قال ابراهيم “Ibráhyim disapproved of writing.” And قال ابراهيم “كانوا يكرهوا الكتاب” Ibráhyim said that they (his shaykhs) disapproved of writing.”

IV.—Reasons why they disapproved of writing down *hadythes*.

23. ... أخبر معمر عن الزهري عن عروة بن الزبير ان عمر بن الخطاب اراد ان يكتب السنن فاستشار في ذلك اصحاب رسول الله صلّم فاشاروا عليه ان يكتبها فطفق عمر يستخير الله فيها شهرا ثم اصبغ يوما وقد عزم الله له فقال اني كنت اردت ان اكتب السنن واني ذكرت قوما كانوا قبلكم كتبوا كتبها فاكبوا عليها وتركوا كتاب الله تعالى واني والله لا البس الله بشي

“Zohry states on the authority of ‘Orwah that the Khalif ‘Omar intended to write down the Sunan. He took the opinion of the companions of the prophet on the subject, and they advised him to

commit them to writing. Before commencing, 'Omar thought proper to try the Istikhárah (to consult fate or according to the Moham-madau notion, to obtain an expression of the will of God) for one month. One day, after he had obtained the expression of the will of God, he said : It had been my intention to write down the Sunan, but I found that the nations who have been before you, have written books, and trusted upon them, and left the book of God. Never will I in any way do any thing what might emulate with the book of God."

Several isnáds are given for this *hadyth*, so that its authenticity seems to me to be beyond a doubt.

24. "Khálid b. 'Orfotah relates: I was sitting with 'Omar when there came a man of the 'Abd al-Qays tribe, who dwelled at al-Sús. 'Omar asked him, Are you A. B. the son of C. D. of the 'Abd al-Qays tribe? Answer: Yes. Do you reside at al-Sús? He answered, again in the affirmative. 'Omar struck him upon this with a pointless spear which he had in his hand. The man said, What is my fault? 'Omar upon this repeated the verse of the Qorán, 12, 1-3, and gave him three more strokes with the cane. The man again asked, What is the matter? 'Omar replied: You are the man who has copied the book of Daniel *نسخة دانيال*. The man said, Tell me what I am to do, and I will obey. The Khalif answered: Go and efface it with hot water and white wool, and do not read it nor give it to any body to read. And if I hear that you read it or give it to any one to read, I punish you severely. Upon this, he permitted him to sit down, and when he was seated, he said: I went and copied a book of the believers in the scripture. Then I bound it in red leather and brought it [to the prophet] and he asked: What have you in your hand, 'Omar? I answered, A book which I copied in order to increase the knowledge which we already possess. The prophet got very angry, so much so that he got quite red. We were just going to the Friday prayers, and the Ançár said, The prophet is angry—to arms! and they surrounded his pulpit. The prophet said: The revelation which has been given to me contains all others and seals them, and it is an abstract of them. My revelation is of unalloyed purity. Do not allow yourselves to be made confused and do not follow those who are confused, (the Jews and Christians.)"

25. "Qásim [d. in 103] a son of Mohammad [was killed in 37, he was a son of the Khalif Abú Bakr] relates: 'Omar was informed that the Moslims had books. He very much disapproved of it and said: I have heard that books have made their appearance among you. God loves those things best which are most equitable and lasting. Every man who has a book is to bring it to me, and I will then see what is to be done. People thought that he wished to see what the books contained, and arrange matters in a manner which might satisfy all parties, and they brought the books to him. He burned them and said: Books will lead you to the same result as they did with the Jews and Christians."

26. "'Omar intended to write down the Sunnah, then it occurred to him that it was better not to commit it to writing, and he wrote orders to all the cities, that every body who had written down *hadythes* was to destroy them."

27. "Morrah (d. in 76 or shortly after) relates that, whilst he was sitting with 'Abd Allah [b. Mas'úd, d. in 32] Ibn Qorrah brought a book, saying, I found this book in Syria, and as I admired it I bring it to you. 'Abd Allah looked into it and said, Those before you rushed into ruin, because they followed their books and abandoned the scripture. Upon this, he sent for a basin of water and washed the book in it to efface the writing."

28. "Aswad (d. 74 or 75) and 'Alqamah [b. Qays, d. about 70] got a volume *مصيفة*, and they took it to 'Abd Allah. It was about sunset when they came to his house, and they were not let in immediately. When 'Abd Allah awoke, he sent his slave woman to see who had knocked at the door. She reported to her master that it was 'Alqamah and Aswad, and he ordered her to admit them. They told him that they had a volume which contained very excellent *hadythes* *هذه مصيفة فيها حديث عجب*. And he at once sent for water and effaced the writing, repeating the words of the Qorân, 12, 1-3, and he added, Occupy yourself with the Qorân and with nothing else."

Nos. 27 and 28 seem to be different versions of one and the same story. There are five other *hadythes*, in which it is said, that 'Abd Allah b. Mas'úd destroyed books, and they are, apparently, all different versions of one or two stories. The following are the facts contained in each:

Aswad relates: "Alqamah brought writings from Makkah or Yaman. It was a volume (or roll) and contained *hadythes* regarding the family of the prophet, and 'Abd Allah effaced it." *جا علقة بكتاب من مكة او اليمن صحيفة فيها احاديث في بيت النبي فحاه عبد الله*

Aswad relates: "A man who was settled in Syria, came to 'Abd Allah with a volume, which contained some of the sayings of Abú-l-Dardá or some of his stories, and 'Abd Allah after he had read a good deal in it, effaced it."

معه صحيفة فيها كلام من كلام ابي الدردا او قصص من قصصه

This version is, in all probability, the true one. Abú-l-Dardá entertained notions which considerably differed from those of 'Omar and his party. And it is possible that this was the cause why 'Abd Allah destroyed the book. In the following version he says that the contents were heretical.

"Aswad saw some persons in the mosque who were reading a book, containing the praises of God, invocations, and blessings upon the prophet. He wanted to copy it, and it was promised to him after another man might have copied it who had already bespoken it. Some days after he found it in the hands of Ibn Mas'úd, who said, Are not the contents of this book mischievous, erroneous and heretical?" *قال الا ان ما في هذه الصحيفة فتنه وضلالة وبدعة*

Solaym, a son of Aswad relates: that he and 'Abd Allah b. Mirdás were reading a volume, which contained stories and passages from the Qorân,* in company with a man of the Nokha' tribe. Ibn Mirdás, according to his own statement, had bought some volumes for money.† As he was waiting in the mosque—the place of rendezvous—for his friends, Ibn Mas'úd sent for him, and saying, The right path is the path of Moḥammad, &c. he destroyed it."

29. 'Amr b. Maymún Awdy [d. 74] relates: "I was sitting in the company of several persons at Kúfah, and there came a man who had a book." They asked, "What book is this?" he replied, "The book of Daniel *قال كتاب دانيال*" If the mob had not protected him, he would have been killed. What! they said, "You have a book besides the Qorân?"

صحيفة فيها قصص وقرآن *

قال عبد الله بن مرداس واشتريت مصحفا بدينهم †

30. Ibn, 'Awn (d. 151) said, "The men of the first century who disapproved of writing held that principle, in order that the Moslems might not be detained by other books from studying the Qorân. And the ancient scriptures have been forbidden, because it is impossible to distinguish what is true in them from what is false, and what is genuine from what is not so. Moreover, the Qorân renders them superfluous."

31. "Sofyán Thawry (d. 161) said, Woe to those who deposit their knowledge on paper *قراطيس*. Yet Sofyán Thawry used himself to write down [*hadythes*] with a view of assisting memory and fixing the true version. But his wish, was that people might learn *hadythes* by heart. Several of the ancients assisted memory by writing *hadythes* down, and they taught them from their writings, but when they knew them well by-heart they expunged them, for fear, that people might rely solely on their books." This *hadyth* is related by Ibn *Hanbal* on the authority of *Yakyà b. Sa'yd*, who heard the above words from the mouth of Sofyán Thawry.

32. "Masrúq said to 'Alqamah, Write down for us *hadythes* which are likely to be confounded. He answered, Do you not know that writing is not approved of? Masrúq said, I will destroy them when I have learned them by heart. Under these circumstances, said 'Alqamah, there is no harm in writing."

33. Sho'bah relates: "Khálid *Hadzdzá* [d. 141] said, I never wrote down *hadythes* unless they were very long, and then I destroyed them when I knew them by heart."

34. "Mohammad [a son of the Khalif Abú Bakr] was of opinion that a man ought to write down *hadythes*, but to destroy the writing when he knew them by heart."

35. "Mançúr b. Mo'tamir (d. 132) disapproved of writing, but subsequently he regretted not to have preserved his *hadythes* in writing."

36. The author says: Many men of the early ages destroyed their writings previous to their death or ordered in their will that they be destroyed. The following are instances of this practice:

Ibn *Zawús* relates, that his father [d. 106] ordered him to burn his writing *انه كان يامر [ابوه] باحراق الكتب*.

Al-No'mán b. Qays relates, that 'Abydah sent on his death-bed for his writings and expunged them.

Sa'd b. Sho'bah relates, that his father [d. in 160] told him to wash out his books if he should die and to bury them; and that he acted up to his orders. Even during his life-time, whenever a number of writings from various people had accumulated, he sent his son to the place where the falcons were kept (?) to bury them there *وكان ابي اذا اجتمعت عنده كتب من الناس ارسلني بها الي البازجاه وفادفنها في الطين*.

Hamnád relates, that Abú Qilábah ordered in his will to give his writings to Ayyúb (d. 131) and if he should not survive, to burn them.

'Ysá b. Yúnos (d. 187 or 191) gave equally orders that his books should be burned.

Ibráhyim b. Háshim relates: The books of Bishr b. al-Háarith (d. 227) filled eighteen boxes and baskets, and we buried them *حدثنا ابراهيم بن هاشم قال دفننا لبشر بن الحارث ثمانية عشر ما بين قمطرو قوصرة*. Ahmad Ibn Hanbal, who was his contemporary, said, that he could not see the object of burying books. In reference to Bishr, I would observe that he did not propagate *hadythes*, either orally or in writing, except that he now and then recited one incidentally.

Awzá'y [d. 157] says, that the science of the *Hadythes* is a noble science, but since it had been deposited in books it lost the freshness which it had, when it was orally communicated and fell into the hands of persons, who have no vocation to cultivate it.

V.—*Sayings of the prophet shewing that he commanded those who cannot trust in their memory to aid it by writing.*

37. قال [ابوهريرة] ان رجلا من الانصار كان يجلس الى رسول الله فيسمع منه الحديث يعجبه ولا يقدر على حفظه فشكا ذلك الي النبي صلعم فقال استعن بيمينك

“Abú Horayrah relates, a man of the Ançár used to sit with the prophet, and to listen to his sayings. And he admired them but could not recollect them. He complained of the weakness of his memory to the prophet, and he said, Assist your memory by your right hand (i. e. write them down).”

There are a number of versions of this *hadyth*, all of which rest

on the authority of "Abú Ġalīh from Abú Horayrah," and it is confirmed by a parallel *hadyth* of Anas b. Málík, which is evidently identical with it and runs: *شكا رجل الى النبي صلعم سؤ الحفظ فقال استعن بيمينك*. "A man complained that his memory was very bad, and the prophet said, Assist it by your right hand."

38. *قال [عبد الله بن عمرو] قلت يرسول الله اعيد العلم قال نعم*
 "'Abd Allah (d. in 65 ?), a son of 'Amr asked the prophet, Shall I fix knowledge? and he answered, Yes. In another version is the addition: I asked, How shall I fix it? And he answered, By writing."

A version of this *hadyth* preserved by 'Amr b. Sho'ayb b. 'Abd Allah b. 'Amr b. al-'Aç from his father, from his grandfather runs *قال النبي قيدوا العلم بالكتاب*. "The prophet said, Fix knowledge by writing." The same saying is recorded by Anas, but the isnád is weak.

39. *قال رافع قلنا يرسول الله صلعم انا نسمع منك شيئا فنكتبها قال اكتبوا ولا خرج*

Ráfi' b. Khodayj (d. in 74, at the age of 86) relates: "We said, O prophet, we hear from you many things, shall we write them down? He answered, Write them down, there is no harm."

This *hadyth* is well authenticated. In one version it is preceded by the following story, whose authenticity is doubtful:

مر علينا رسول الله صلعم ونحن نتحدث فقال ما تحدثون قلنا نتحدث عنك يرسول الله قال تحدثوا وامنوا من كذب علي متعمدا في جهنم قال ومضي رسول الله صلعم لحاجته ونكس القوم رؤوسهم وامسكوا عن الحديث وهمهم ما سمعوا من رسول الله فقال ما شأنكم الا تحدثون قالوا الذي سمعنا منك يرسول الله قال اني لم ارد ذلك انما اردت من تعبد ذلك قال فتحدثنا قال قلت يرسول الله انا نسمع منك اشياء فنكتبها قال اكتبوا لاخرج

Ráfi' b. Khodayj relates: "The prophet passed us as we were conversing." He said, "What are you conversing about?" We answered, "We repeat your sayings." He observed, "Do repeat them, but speak the truth, for he who intentionally attributes to me a saying which I have not uttered: goes to hell." The prophet had some business and went along. The people hung down their heads and refrained from repeating his sayings. The prophet asked, "Why do you no longer repeat my sayings?" They answered, "On account of the remark which we heard from you." The prophet said, "This is

not what I meant, I said, He who lies *intentionally*." Upon this, we continued to repeat his sayings. I asked him: "We hear from you many things, shall we write them down. He answered, Write them down, there is no harm."

40. قال [عبد الله بن عمرو] قلنا يرسل الله انا نسمع منك احاديث لا نحفظها افا نكتبها قال بلى فاكتبوها

'Abd Allah b. 'Amr relates: "We said to the prophet, We hear sayings from you which we cannot remember, shall we write them down? He answered, By all means, do write them down."

There are thirty versions of this *hadyth* extant, which differ very slightly from each other. Thus in most of them is *شيا* instead of *احاديث*, and in some the answer of the prophet is simply *نعم*. In some versions is added: *عند الغضب والرضا قال نعم انه لا ينبغي لي ان اقول الا حقا*: "We asked, Even if you are influenced by likings or dislikings?" and the prophet answered, "Yes, for I never speak anything but the truth." The *isnáds* for these thirty versions can be reduced to four. 'Abd Allah related it to his son, and he communicated it to his son, 'Amr, and after 'Amr the *isnáds* diverge very much. 'Abd Allah also related these words to his grandson Sho'ayb b. Moḥammad b. 'Abd Allah, who transmitted them to his pupils, and through several of them, it has come down to us. And finally, 'Abd Allah mentioned them also to 'Atá, and he related them to his son, 'Othman, who again told them to his pupils, and they preserved them. There is besides a version, which differs in expression from the above, and which has been heard from 'Abd Allah himself by Khálid b. Yazyd and by Zayd 'Ammy. Therefore, unless 'Abd Allah himself invented the story, it must be true.

41. قال عبد الله بن عمرو كنت اكتب كل شي اسمعه من رسول الله صلعم نريد حفظه فنهيني قريش فقالوا انك تكتب كل شي تسمعه من رسول الله صلعم ورسول الله بشرتكلم في الغضب والرضا فامسكت عن الكتاب فذكرت ذلك لرسول الله صلعم فقال اكتب فوالذي نفسي بيده ما خرج مني الا حق *

'Abd Allah b. 'Amr relates: "I was in the habit of writing all those sayings I heard from the prophet, which I wished to remember. The Qorayshites prevented me, and said, 'You write down what you hear from the prophet, though he is but a man who is guided by his likings and dislikings.' Upon this I ceased writing, and I

mentioned the matter to the prophet, and he said, Write, by Him in whose hand I am, nothing proceeds from me but truth."

This *hadyth* has been taken from 'Abd Allah by Yúsof b. Náhik, and handed down from him by an isnád quite distinct from any other.

42. Abú Horayrah said, "No one of the companions of the prophet has preserved more *hadythes* than I, except 'Abd Allah b. 'Amr. But he used to write them down and I did not write them down."

There are several versions of this *hadyth* extant, in some is added, "He wrote them down and learned them by heart, whereas I merely learned them by heart. The prophet allowed him to write them down."

VI.—*Companions of the prophet who wrote down hadythes.*

43. عن طاوس عن عبد الله بن عمرو بن العاص قال الصادقة صحيفة كتبتها من رسول الله

Tāwús relates "'Abd Allah b. 'Amr b. al-'Aç said, Çádiqah is the title of a book in which I collected sayings of the prophet."

44. Mojáhid relates: "I paid a visit to 'Abd Allah b. 'Amr, and I found a volume *صحيفة* under his couch. He prevented me from taking it. I asked, 'What is it, that you prevent me from taking it?' He replied: 'This is the Çádiqah (the Truthful Book) and contains what I heard from the prophet.' There was no one between me and the prophet, when the information which it comprizes was communicated to me. As long therefore, as I have this book, the Qorân and the Wahz, I do not mind the whole world."

Mojáhid says: Çádiqah is a volume *صحيفة* in which he wrote down what he heard from the prophet, and Wahz is a piece of ground which he gave away for the support of the poor.

45. Anas Ibn Málík says: "that Abú Bakr wrote down for him the laws regarding alms, which were sunnah of the prophet."

Hammád relates, "I took from Thomámah b. 'Abd Allah (d. after 110) a document كتاب of which he believed that Abú Bakr had written it for Anas when he appointed him to collect the alms prescribed by law. There was the prophet's seal impressed upon it, and it contained the laws regarding alms."

46. سمع عمرو بن ابى سفيان عمر بن الخطاب يقول قيدوا العلم بالكتاب

'Amr b. Aby Sofyán heard 'Omar b. al-Khattáb saying: "Fix knowledge by writing it down."

47. *Tárik* relates: "I saw 'Alyy, the son of Abú Tálíb on the pulpit, and he said, I have no book to read to you except the Qorân and this volume (roll) صحيفة. It was attached to the sword which was provided with a ring of iron, and the rings, by which the sword was suspended were equally of iron. صحيفة معلقة في السيف. عليه حلقة حديد وبكرانه (sic) حديد The roll contained the laws regarding the alms, as 'Alyy had received them from the prophet."

According to another version of this story, which rests on the testimony of another eye-witness, it contained the laws regarding the sacredness of the territory of Makkah. In this version the roll is described: صحيفة معلقة في سيفه فيها اسنان الابل وشى من الجراحات. "The roll was attached to his sword, and there were wrapped up in it camel's teeth, and some implements for surgery."

48. 'Alyy said, "Fix knowledge by writing it down."

He also said, "Who will sell me knowledge for money" or according to others, "Who will sell me a roll صحيفة to write knowledge in it, for money."

49. Shorakhbyl Abú (Ibn ?) Sa'd relates: *Hasan*, the son of 'Alyy addressed his sons and nephews, and said, "You are now small, but you will soon be big, do therefore learn knowledge (i. e. *hadythes*) and if any of you is unable to repeat them (from memory) let him write them down and keep them in his house."

50. قال [عبيد الله بن ابي رافع] كان ابن عباس ياتي ابا رافع فيقول ما صنع رسول الله صلعم يوم كذا ما صنع رسول الله صلعم يوم كذا ومع ابن عباس الواح يكتب فيها

'Obayd Allah b. Aby Raff' relates: "Ibn Abbás came to Abú Ráfi' and said, 'Did not the prophet one day like this? Did not the prophet one day like this?' Whilst he was saying so, he wrote on tablets which he had."

51. Ibn 'Abbás said: "The best mode of fixing knowledge (*hadythes*) is writing."

52. Abú Sa'yd Khodry says: that they used to write nothing else but the Qorân, and the Tashahhud (a prayer).

53. 'Itbán b. Málík (died under the Khalifat of Mo'awiyah) relates: "I had a sore-eye, and I wished that the prophet might

come into my house, in order, that I might say prayers in it. He came with some of his companions and said prayers. They talked of the mischief which the Moslems, who were not sincere, were doing and ascribed the greatest part of it to Málík b. Dokhayshim. The prophet said, Does he not profess that there is no god besides the God, and that I am his prophet? No man who makes this profession will go to hell. 'Itbán continues, This hadyith pleased me so much, that I told my son to write it down and he did write it down."

54. قال كنا إذا أتينا أنس بن مالك وكثرنا عليه إخراج إلينا مجال من كتب فقال هذه كتب سمعتها من رسول الله صلعم وقرأناها عليه

If we went to Anas and bothered him much, he produced volumes of books and said: "These books (writings) contain what I heard from the prophet." And we read them before him.

This important story rests on a double isnád, and there are besides three other versions of it extant which run : قال كانوا إذا كثروا على أنس بن مالك في الحديث أتاهم بمجال فقال هذه كتبها ثم قرأتها على رسول الله صلعم — قال كان إذا حدث فكثر عليه الناس جا بمجال فإلقاها ثم قال هذه إحدائ سمعتها وكتبها عن رسول الله ثم عرضتها عليه — كان إذا حدث فكثر الناس عليه للحديث جا بصكال فإلقاها إليهم فقال هذه إحدائ سمعتها من رسول الله صلعم وكتبها وعرضتها على رسول الله صلعم عبد الله بن المثنى قال حدثني عماري النضر وموسى ابنا أنس بن مالك عن أبيهما أنس أنه إمرهما بكتابة الحديث والأثار عن رسول الله صلعم وتعلمها وقال أنس كنا لا نعد من لا يكتب علمه علما

'Abd Allah b. al-Mothanniyy relates: "My two uncles, al-Nadhr [d. shortly after 100] and Músà, [d. after his brother] the sons of Anas b. Málík [d. 92] said, that their father ordered them to write down the sayings and example of the prophet, and learn them." For, he observed, "We never considered the knowledge of a man to be knowledge if he does not write it down."

56. "Al-Hasan b. Jábir (d. in 128) asked Abú Imámah [Çodayy] Báhily [d. in Syria in 86] regarding writing down knowledge, and he answered, there is no harm."

57. 'Abd Allah b. 'Amr relates: "Several men went to the prophet and I was the youngest among them," and he said, "If a person, intentionally attributes to me a saying which I have not uttered, he will go to hell." When they had left the prophet, I

asked them: How do you repeat *hadythes* you have heard from the prophet? I find you are paying great attention to *hadythes*. They laught and said, "all what we have heard from him we have con- signed to writing," قالوا يا ابن اختنا ان كل ما سمعنا منه هو عندنا
في كتاب

There are two versions of this *hadyth*.

VII.—*Distinguished men of the first century who have not seen the prophet, but who approved of writing down hadythes and did so themselves.*

58. 'Abd al-Raḥmān b. Ḥarmalah [d. in 145] says, "I had a bad memory" (or according to Çayrafy's version, "and I could not learn any thing by heart") "therefore Sa'yd b. al-Mosayyab [d. in 90 odd] gave me leave to take notes."

59. كان الشعبي يقول في الكتاب قيد العلم

Sha'by [d. in 105 aged 77 years] used to say "Writing fixes knowledge." He also used to say, "If you hear anything from me write it down, and in the worst case on the wall." He also said, "Write down every information you collect."

60. عن الاعمش عن الحسن قال ان لنا كتباً نتعاهدها

Al-Ḥasan [Baḡry? d. in 110] said, according to A'mash [d. in 148], We have books on which we place our reliance.

61. عن ابي مجلز عن بشير بن نهيك قال كتبت عن ابي هريرة كتابا فلما اردت ان افارقه قلت يا ابا هريرة اني كتبت عنك كتابا فارويه عنك قال نعم اروه عني

Bashyr b. Nahyk said, according to Abú Mijlaz [see p. 220]: I collected the *hadythes* which I had heard from Abú Horayrah in a book. When I was about leaving him I said, "I have collected your *hadythes* in a book, shall I propagate its contents on your authority?" He answered, "Yes, do propagate them."

62. عن محمد بن سيرين عن ابن افلح يعني كثيرا قال كنا نكتب عند زيد
بن ثابت

Kathyr b. Aflah said, according to Moḥammad b. Syryn [d. 110]: we used to write when we attended the lectures of Zayd b. Thábit [who used to write the revelation for the prophet and died in 45 or 48, or after 50]."

63. عن تمام بن نجيع عن الحسن انه كان يكتب للناس العلم ويعرضه لهم

Tamán b. Najyh relates of Hasan [Baçry? d. in 110] that he used to copy the *hadythes* for the people and rehearse them for them [with a view of correcting them].

64. عن سعيد بن جبیر قال كان ابن عباس يملی علی فی صحیفه حتی املاها و اکتب فی نعلي حتى املاها

Sa'yd b. Jobayr relates [d. in 95], "Ibn Abbás used to dictate to me *hadythes*, and I wrote them on a roll, till I had filled it and then I wrote on my shoe [they wear yellow shoes or boots]."

In another version it is stated, "I wrote the *hadythes* which I heard from Ibn 'Abbás on tablets, and when I had filled them I took my shoes (or boots) to write upon." A third version runs:

كنت اكتب عند ابن عباس فی صحیفه حتى املاها ثم اكتب فی طهر نعلي ثم اكتب فی كفي

"In the lectures of Ibn 'Abbás I used to write in my roll and when it was filled I wrote on the upper leather of my shoes (or boots) and then on my hand."

To expedients, like these, though perhaps not quite as bad, students and short-hand writers take refuge in our days if they are short of paper. The following *hadyth* shows that Ibn Jobayr subsequently made a fair copy.

عن سعيد بن جبیر قال كنت اسمع من ابن عمرو و ابن عباس الحديث بالليل و اكتبه فی واسطه رجلي حتى اصبح وانسخه

Sa'yd b. Jobayr relates: "I used to hear *hadythes* from 'Abd Allah b. 'Anr and Ibn 'Abbás, and I used to write them down on my two feet (boots), and the next morning I copied them." The words which I translate by "my feet or boots" run in another version على واسطه الرجل فاكتبه.

65. The pupils of Qatádah asked him whether they might write down his lectures? and he answered, What prevents you?

66. قال ابو قلابة الكتاب احب الى من النسيان

Abú Qilábah (d. 104) said: "It is better to write down than to forget."

'Abd Allah b. Moḥammad b. 'Aqyl [d. after 140] relates: "We used to go to Jábir b. 'Abd Allah (d. in 70 odd at the age of 94 years) and ask him regarding the life (according to another version, 'regarding the *sonnan* or institutions)' of the prophet, and we wrote it down."

In another version it is stated, that 'Abd Allah b. Mokhammad b. 'Aqyl was accompanied by [his relations], Mokhammad b. 'Alyy Abú Ja'far, and Mokhammad b. al-Hanafyyah. And in one version it is stated that they were provided with tablets *الواح* for writing.

67. *عن عبد الله بن حنبل قال رأيتهم يكتبون عند البراء بكفهم بالقصب*
'Abd Allah b. Hams (?) relates: "I saw them in the lectures of Barâ [d. 72] employing their hands in writing with reeds."

68. 'Obay b. al-Mokattab says: "I saw them writing down the comments on the Qorân in the lectures of Mojâhid [who died at the age of 83 in A. H. 102]."

69. *عن عبد الله بن دينار ان عمر بن عبد العزيز كتب الى ابي بكر بن محمد بن عمرو بن حزم يا مرة انظر ما كان من حديث رسول الله صلعم اوسنة ماضية او حديث عمرة فاكتبه فاني قد خفت دروس العلم وذهاب اهله*

'Abd Allah b. Dynâr [d. 127] relates: "that the Khalif 'Omar b. 'Abd al-'Azyz wrote orders to Abú Bakr b. Mokhammad b. 'Amr b. Hazm, See what *hadythes* on ancient institutions are extant and pay particular attention to the *hadythes* which 'Amrah knows, and write them all down, for I fear that the knowledge of *hadythes* will disappear, and those who know them will die away."

There are various versions extant of this *hadyth*. In one it is said, "He wrote to Abú Bakr b. Mokhammad at Madynah," and in one, "He wrote to the people of Madynah." See on Abú Bakr b. Mokhammad *suprà* p. 209.

70. *يقول [معمر] ان الزهري ربما كتب الحديث في طهر نعله مخافة ان يفوته*

Ma'mar relates: "Zohry frequently noted down a *hadyth* on the upper leather of his boot for fear it might escape him."

71. *معمر عن الزهري قال كنا نكره كتاب العلم حتى اكرهنا عليه هولا الامراء فرأينا ان لا يمنع احدنا (احد) من المسلمين*

Zohry said according to Ma'mar: "We disapproved of writing down *hadythes* to such an extent, that we induced also those chiefs [who are not mentioned] to disapprove of it, but at last we saw that no Moslim forbids writing."

72. *قال [ابن اخي الزهري] سمعته يعنى ابن شهاب يقول لولا احاديث تاتي من قبل المشرق لنكرها لا نعرفها ما كتبت حديثا ولا اذنت من كتابه*

The nephew of Zohry relates: "that he heard his uncle saying: It is only on account of *hadythes* which come to us from the east,

and which we deny and do not acknowledge, that I write down the *hadythes* and permit them to be written down."

73. Rijá b. Haywah [d. in 112] said: Hishám b. 'Abd al-Malik asked me regarding a *hadyth* which I had forgotten, but fortunately I had written it down.

74. Abú Sofyán says: "Salmán Saykary used to write down *hadythes*, but I did not write them down."

75. *عن منصور قال قلت لابراهيم ان سالما اذا حدث تكزم قال ان سالما يكتب وانا لا اكتب*

Mançúr relates: "I said to Ibráhyim, if Sálím b. Aby-l-Ja'd [d. in 98] relates *hadythes*, he does so at full length but you seem to be conglomerated." He replied, "He is in the habit of writing them down and I do not write them down." In another version it is said *لسالم اتم حديثا منك*

76. Mo'áwiyah b. Qorrah said: "The knowledge of him who does not write it down is not considered as knowledge."

77. *عن سلم العلوي قال رايت ابان بن ابي عباس يكتب عند انس بن مالك في سورحة يعنى الواح*

Salm (?) says: "I saw Abán b. Aby 'Abbás write on tablets in the lectures of Anas b. Málik."

78. Ayyúb [d. in 131] said: "They blame us for writing down *hadythes*, though it is said in the Qorán 20, 54. The Lord preserves the knowledge thereof in writing."

79. Mo'áwiyah b. Aby Maysarah relates: "I saw Abú Shaybah writing at al-Hakam's, who had the *hadythes* written on papyrus." *رايت ابا شيبه يكتب عند الحكم معه الحديث في القراطيس*

80. Yakyà b. Sa'yd [d. in 144] said, "If I had written down all what I heard, I should be better contented with my position than I am now." [Yet we learn from the Tahdzyb, that he left writings which were used by Hammád].

81. Hammád [born in 98, d. in 179] relates: "Jaryr b. Házim and others send to me words. We intend to (collect and) write down the *hadythes* of Yakyà b. Sa'yd, and hope you will take a part in it. I met them, and we repeated to each other his *hadythes* and they wrote them down." *قال حماد قال لي جريز بن حازم وغيره انا هممنا ان نكتب حديث يحيى بن سعيد فلو حضرتنا قال حماد حضرتهم وتذاكرنا حديثه بعد فكتبوا*

82. *Ḥammād b. Salīmāh* [who was the author of several works *هو صاحب تصانيف* and d. 167] said: "that he used to go to his *Shaykh* and heard ten *hadythes*, more or less, and impressed them in his memory, then he went home and wrote them down."*

83. *Mo'atamir* relates, "My father wrote to me when I was at *Kúfah*, Buy books *كتب* and write down knowledge, for wealth is transitory, but knowledge is lasting."

84. 'Abd Allāh b. *Idrys* says, "My father used to say to me, Learn by heart, but attend above all to writing. When you come home, write, and if you fall into need, or your memory fails you, you have your books." "With all that," he says, "I have not written down any *hadythes* of *Layth*, or *Ash'ath* or *A'mash*." From this and the preceding passage it would appear that books found a good market.

85. *Abú Ḥalīz Farrā* asked *Ibn al-Mobārak* regarding the writing down *hadythes*, and he answered, "If we had them not in writing we could not learn them by heart."

86. *Khalyl b. Aḥmad* says: "Whatever I heard I wrote down, and whatever I wrote down I learned by heart, and whatever I had learned by heart I found useful."

VIII.—*Various Hadythes of the Khatyb Baghdādī bearing on the value of books.*

87. *عن أبي الدرداء عن النبي تحتة كنز لهما قال صحف علم خبأ لها ابوهما*

"The prophet said according to *Abú Dardá* that under the 'treasure' mentioned in the verse of the *Qorān* 18, 81, volumes containing knowledge are to be understood which had been concealed by the father of the two orphans for their use."

Ibn 'Abbās, according to a *hadyth* preserved by *Bokhāry* and others gives the same interpretation to that verse.

88. *قال ذو الرمة لعيسى بن عمر اكتب شعري فالكتاب اعجب الى من الحفظ ان لاعرابي ينسى الكلمة قد سهرت في طلبها ليلة فيضع في موضعها كلمة في وزنهما ثم ينشده الناس والكتاب لا ينسى ولا يبدل كلاما بكلام*

Dzú-l-Rummah [d. in 117] said to 'Ysà b. 'Omár [d. 149], Write down my poetry, I like it better than if you learn it by heart. The *Bedouins* forget a word, in search of which I have spent a restless

* *Dzohaby* says: *لم يكن لعماد بن سلمة كتاب الا كتاب قيس بن سعد* *Hammād* possessed no other book but that of *Qays b. Sa'd* [who was a companion of the prophet and d. in 60].

night and they put another word of the same measure in its place, and people repeat the wrong reading. A book does not forget, nor does it substitute one word for another.

89. قال [زهير] حدثنا موسى بن عقبة قال وضع عند — حمل بعير من كتب ابن عباس فكان علي بن عبد الله بن عباس اذا اراد الكتاب كتب اليه ابعت الي بصحيفة كذا وكذا فينسخها ويبعث بها

Mūsà b. 'Oqbah [d. in 141, and left a work on the biography of the prophet, see p. 218 *suprà*] relates, In the house of (the name is not legible,) the writings (autographies) of Ibn 'Abbās [a companion of the prophet, d. in 68] were preserved which would have formed a camel's load (equal to about six hundred weights). Whenever 'Alyy b. 'Abd Allah [d. in 113] a grandson of Ibn 'Abbās wanted a book, he wrote to him requesting him to send him such and such a volume, and he copied it and sent it to him.

90. Ibn Dāb [on whom see Ibn Qotaybah, p. 269] was frequently seen carrying a book, some one said to him that it was below his dignity, but he was of a quite different opinion.

91. قال المبرد ما رايت اختص على العلم من ثلثة الجاحظ والفتح بن خاقان واسماعيل بن اسحاق القاضي فاما الجاحظ فانه كان اذا وقع في يده كتاب قراه من اوله الى اخره اي كتاب كان واما الفتح فكان يحمل الكتاب في خفه فاذا قام بين يدي المتوكل ليبول او يصلى اخرج الكتاب فينظر فيه وهو يمشي حتى يبلغ الموضع الذي يريد ثم يصنع مثل ذلك في رجوعه الى ان ياخذ مجلسه واما اسماعيل بن اسحاق فاني ما دخلت عليه الا وفي يده كتاب ينظر فيه او يقلب الكتب لكتاب ينظر فيه

Mobarred said, The only three men I have seen who were really devoting themselves to sciences were Jāhitz, Fatḥ b. Khāqān and the Qādhiy Isma'yī b. Ishāq. Jāhitz used to read every book, he could get hold of from one end to the other whatever its contents might be. Fatḥ used to carry a book in his boot (being a Turk, he evidently wore the wide Tatar-boots). Whenever he left the presence of the Khalif to say his prayers or for any other business, he took out his book and read on his way to his destination and on his way back again, until he again took his place in the presence of the Khalif. And whenever I paid a visit to Isma'yī I found him reading in a book or seeking a book in his library to consult it.

92. Ibn 'Abbās Dagḥūly [d. 325] said, that he always had the following four volumes مجلدات with him: The book of Mozauny [d.

264 and left four celebrated Sháfite law books], [the dictionary called] Kitáb al'ayn, the Tarykh al-Bokháry (ou biography) and Kalylah wa Damnah.

قال [ابن شهاب] خرجنا مع الحجاج بن يوسف الى الحج فلما كنا بالسحرة قال تبصروا الهلال فان في بصري عهدة فقال له نوفل بن مساحق اقدرني مم ذاك من كثرة نظرت في الدفاتر

Zohry [d. 123, or 125] relates: "We accompanied Hajjāj b. Yúsof [d. 95] on a pilgrimage to Makkah, and when we had arrived at Sakrah, he said, "Look, whether you can see the new moon, my eyes are too weak." Nawfal b. Mosáhiq [d. shortly after 90] observed, "Do you know why? on account of your incessant reading books."

IX.—*Extracts from other authors than the Khatyib Baghdády bearing on the same subject.*

94. Ibn Sa'd, in the chapter on "Deputations which waited on Mohámmad" mentions several instances of documents granted by the prophet or Abú Bakr to persons, which were in his time [d. 230] still in possession of their descendants.

95. The same author says in folio 64 verso أخبرنا محمد بن عمر حدثني اسحق بن عبد الله بن نسطاس عن ابي عمرو بن حريث العذري قال وجدت في كتاب ابي قالوا قدم رسول الله الخ

Abú 'Amr b. Hórayth 'Odzy said: I found written in the book of my fathers: "The prophet, &c."

The same author says in the same page أخبرني محمد بن عمر حدثنا يحيى بن سهل بن ابي حنيفة (خيثمة؟) قال وجدت في كتب ابي Yaḥyà b. Saḥl says, I found in the books of my father.

96. The following instance in which men who had learned *ḥadythes* by heart referred to their notes, is mentioned in the *Iṣābah voce Qárib*: Sofyán [Thawry? d. 161] said, My recollection was borne out by what I found stated in my book on the authority of Ibráhym b. Maysarah [d. 132] who had it from Wahlb b. 'Abd Allah, viz.: that the name in question is spelled "Ibn Márib," whilst people commonly say "Ibn Qárib."

97. Ibn Banná Moqaddasy who wrote in 375 says in his Geography, in describing Rámhormoz والداران جميعهما بالبصرة والتي داركتب كالتى بالبصرة والداران جميعهما بالبصرة وبها داركتب كالتى بالبصرة والداران جميعهما بالبصرة اتخذهما بن سوار وفيهما اجرا على من قصد هما ولزم القراءة والنسخ الا ان

خزانة البصرة اكبروا عمرو اكثر كتبها وفي هذه ابد شيخ يدرس علم الكلام على مذهب المعتزلة. "In this town is a library like that of Baḡrah. Both have been founded by Ibn Sowār. Those who visit the library with a view of reading or copying books get stipends. The library of Baḡrah is larger, in better condition and contains more books. To this library of (Rāmhormoz) there is always a Shaykh attached, who teaches dialectic theology according to the system of the Mo'tazilites."

Another large library was at Shyráz in the palace which was built by the nephew and successor of 'Adhod aldawlah. The palace was the most extensive and splendid building that existed in those days and contained three hundred and sixty apartments, and one of them was devoted to the library, which is described by Ibn Banná in the following words: وخزانة الكتب حجرة على حدة عليها وكيل وخازن ومشرق من عدول البلد ولم يبق كتاب مصنف الى وقته من انواع العلوم كلها الا وحصله قيدها وهي ازج طويل في صفة كبيرة فيه خزائن من كل وجه وقد الصق الى جميع حيطان الازج و الخزائن بيوتا طولها قامة في عرض ثلاثة ادرع من الخشب المزوق ينحدر من فوق والدفاتر منضدة على الرفوف لكل نوع بيوت وفهرستات فيها اسمي الكتب لا يدخلها الا وجيه وطفت في هذه الدار كلها سفلا وعلوها

"The library occupies a separate apartment. And there are appointed over it an agent, a librarian and a superintendent. These officers are chosen from among the most respectable persons of the place. The founder has procured for this library every book on every science and of every author. The apartment consists of a very long arched-room which stands in an immense Çoffah (a platform walled in on three sides and open on the fourth side towards the courtyard and provided with a roof, see p. 63 note). On every side of this arched-room are chambers (or recesses) and against the walls of the arched-room and of the chambers, are closets six feet long and three cubits wide. The closets are of wood lacquered with gold and silver, and the entrance into them is from above. The books are piled up upon the shelves of the closets. To every science a number of those closets is allotted and there are catalogues which contain the names of the books. Only persons of respectability are allowed to visit the library. I have gone over the whole palace."

The Fihrist of Ibn Nadyūn, who wrote in 377 or two years after

this description was given, seems to be the catalogue either of this or the Basrah library.

98. This and the following five paragraphs are taken from the *Ilmā'* of the Qádhīy 'Iyádh [d. 544].

قال عبد الرحمان بن مهدي كان عند صخرمة كتب لاييه لم يسمعها منه قال الحكم ابن مقسم عن ابن عباس انما سمع منه اربعة احاديث والباقي كتاب وحكى ان اسحاق بن راشد قدم الري فجعل يقول حدثنا الزهري فسيل اين لقيته قال لم القه مررت ببیت المقدس فوجدت كتابا له

'Abd al-Rahmán b. Mahdiy relates: "Makhrimah had books from his father, the contents of which he had never heard from him [yet he related the *hadythes* which they contained on his authority] 'Abd al-Rahmán also relates, Al-'Ilakam, the son of Miqsam heard only four *hadythes* from Ibn Abbás, the rest he had from him in writing. He also says, Isháq b. Ráshid came to Ray and said, Zohry informed, &c.' He was asked, Where have you met Zohry? and he answered, "I have not met Zohry, but I found a book of his at Jerusalem."

Isháq b. Ráshid died during the reign of Abú Ja'far.

99. Awzá'y relates: "that he heard Thábit b. Ma'bad say, The diacritical dots are the light of a book," نورالكتاب العجم. Some persons said according to Awzá'y, Diacritical marks are required in difficult passages انما يشكل ما يشكل.

100. At the time of Málik b. Anas it was so common that the pupil first copied the *hadythes*, and then read them before the Shaykh, that Malik said to 'Abd Allah b. Moslimah Qa'naby. The transmission is more valid if you read to me than if I read to you قراتك على اصح من قرأتني عليك. Málik was also asked whether hearing or rehearsal was better in his opinion, and he said rehearsal سئل مالك فقل له العرض احب اليك ام السماع فقال بل العرض.

"Hearing" means that the Shaykh relates or reads a *hadyth*, and the pupil listens to him. "Rehearsal" means that the pupil copies it and reads it to the Shaykh, who rehearses it.

101. سمعت عبيد الله بن عمر العمري يقول كنا ناتي الزهري بكتاب من حديثه فنقول له يا ابا بكر هذا من حديثك فياخذ فينظر فيه ثم يرده ويقول نعم هو من حديثي قال عبيد الله فباخذ وما قراء علينا وما استجزنا اكثر من اقراءه بانه من حديثه فهذا مذهب الزهري اصام هذه الشان

'Obayd Allah b. 'Omar 'Omary said, "We took a book to Zohry which contained *hadythes* of his, and we asked him, Are these *hadythes* of yours? He took the book and looked into it, then he returned it, and said, Yes, these are *hadythes* of mine." 'Obayd Allah says, "We took the book [and propagated the *hadythes* on his authority] though he had not read it to us, nor did we ask him for an *ijázah* beyond the affirmation that the book contained *hadythes* of his. This is Zohry's system of propagating *hadythes*, who is the greatest *mau* in this science."

102. قال الواقدي قال ابن ابي الزناد شهدت ابن جريج جا الى هشام بن عروة فقال له الصحيفة التي اعطيتها فلانا هي حديثك قال نعم قال الواقدي فسمعت بن خريج بعد ذلك يقول حدثنا هشام بن عروة

Wáqidy relates: "Ibn Aby-l-Zinnád said, I was present when Ibn Jorayj came to Hishám b. 'Orwah, and asked him, Does the roll which you have given to A. B. contain your *hadythes*? and he answered, "Yes." Wáqidy observes, "I subsequently heard Ibn Jorayj repeat these *hadythes*, saying, I have been informed by Hishám b. 'Orwah."

103. Zayd b. Ayyúb said to Mohammas b. Syryn: "Some body has left me his books by will, shall I repeat the *hadythes* which they contain quoting his authority?" And he replied, "Yes." Subsequently he said, "I do not tell you to do it nor do I tell you not to do it."

I refrain from repeating passages bearing on this subject, which have already been published and postpone collecting the information contained in Dzohaby's Tahdzyb for a time, when I may have more fully examined that work than at present. I may refer here to what I have said on writing in early days in p. 211 to 213 of this volume.

(To be continued.)

Notes on the Iron Ore Statistics and Economic Geology of Upper Assam.—By Lt.-Col. S. F. HANNAY, communicated by the Government of Bengal.

SIR,—Having on a late visit to Seeksagur obtained through the kindness of Capt. Holroyd, Collector, a few notes on the iron ore statistics of Assam in the olden time, as well as up to the present date, I have put them together in the hope that they may be found interesting, and perhaps draw attention to the vast extent of our iron ore resources in the shape of clay iron ores, I presume of the same description as those found and worked in Europe. Many of these beds lie stratified with the coal, and others, if not in a position conformable with veins of workable coal, are near enough to admit of the coal being made available for smelting purposes.

I note particularly the localities of Teeroogong and Hattighur, within one march of Seeksagur, where coal abounds in the Suffry and Teeroo valley, besides inexhaustable tracts of timber. Abundance of lime also is now to be procured in the Naga hills, as well as in the Morung district near Golahghat, of a description suitable to be employed as a flux, of the importance of which in the smelting of iron ore the Assamese are entirely ignorant.

My own researches in regard to iron ores, have been altogether, I may say, on the South side of the valley; lately, however, the remains of iron scoriæ were found at the gorge of the Dergmoo river on the North bank, where there is iron ore in abundance.

I have not sent a great variety of samples of ore, as this is not the season for collecting them; I need hardly say, however, that I shall be most happy to attend to this at a future period, should there be any wish for further information as to the quality of the iron ores in comparison with those of other parts of India.

The following is a list of the samples now sent:—

- No. 1. Sample of pig iron from Teeroogong hill ore.
2. Ditto of ore, ditto ditto.
3. Sample of pig iron from Bosa Doyung ore.
4. Ditto of ore extracted from the plastic clay.

5, 6. Samples of ore—bearing plastic clay of Bosa Doyung.

7, 8, 9. Samples of clay iron from the Jeypore field.

10. Sample of ore from the gorge of the Dergmoo river opposite Dibrooghur.

11, 12, 13. Samples of lime.

In remote times and up to a certain period in the annals of Assam, the valley was undoubtedly under Western India influence, and for the commodities of salt and manufactured iron its inhabitants were indebted to their trade and intercourse with Gangetic India.

The period to which I allude dates from the commencement of the supremacy of the Ahorns, early in the 16th century. This people, a branch of the great Shan nation, by the overthrow of the Chooteeahs (descendants of a Western Indian race of Rajputs) became masters of the Upper, and Central divisions of the province and finally conquered the whole valley; which, with Indo-Chinese jealousy of foreign intercourse with the nations of the West, they closed to the people of India, and trade was entirely restricted to the Goalparah Chowkeys—then it was, that the inhabitants of Upper Assam, at least, became dependant upon their own resources in the articles of salt and iron.

In regard to the latter article, we have evidence throughout the whole of the Jorhath district that the smelting of iron was carried on to a great extent, both from the quantities of scorix visible at different points between Jeypore and the Bosa Doyung, and the number of native manufactured iron guns found throughout the province, (but particularly in the Seeksagur district) varying in size from a matchlock barrel to the great gun at Rungpore (see note at the end of table No. 2.)

I cannot however do better than record the information I have received on this matter both historically and statistically through the collectorate of Seeksagur.

In the year 1422 A. S., A. D. 1500 and during the reign of Deehingeeah Swarga Narain, on the defeat of the Chooteeah Rajah, after a war with these people, the Ahorns acquired many fire-arms, one of which was named "Meeta Hoolaug." The victors also captured many blacksmiths, and from this date blacksmith shops were established for the manufacture of fire arms, and other

measures taken by the Ahorn Rajah, for classing the iron workers under *Hazaree Keihs* and *Saikeahs* and they amounted at one time to 3,000.

Subsequently in the war with Turbuck in the year 1454 A. S., 1532 A. D. the Assam Rajah, Buddhi Swarga Narain, after having defeated and pursued the Turbucks as far as the Korotyah river in Northern Bengal, captured many cannons, fire-arms, and other weapons, from the defeated party. Again in the year 1549 A. S., 1627 A. D., after the retreat and discomfiture of the invading army of Said Abu Bakr, the Soobah of Bengal, the Rajah of Assam became possessed of many handsome cannons, both iron and brass, and other weapons, and he was thus induced to call in, from foreign countries, several able blacksmiths and brass-founders to instruct his own people.

The manufacture of guns and other fire-arms continued to flourish until the civil wars and rebellion of the Muttocks, which so disorganized the country, that during the subsequent ministry of the Bura Gohain, the *Khel* of blacksmiths and iron-workers became reduced to 500 in number and eventually to 100 on the invasion of the Burmese and its attendant evils.

At the present date, there are only from forty to forty-five persons in the Seeksagur district, who understand the smelting and working of iron ores, and but one or two blacksmiths who may have witnessed the manufacture of small arms; the manufacture of cannon ceased in the commencement of the civil wars.

Throughout the whole Southern Frontier zillah Seeksagur, i. e. from Jeypore to the Doyung River, iron ores are in abundance; and in former days, in several localities, large establishments were formed by the Assam Government for the smelting of these ores and the manufacture of iron.

The localities of Teeroogong hill and its vicinity about twelve miles S. E. of Seeksagur and of Hattighur further to the East, are considered the best, both as to the quality and quantity of the ores.

In the districts of Bosa and Doyung a ferruginous sand is washed from the plastic clay, which was smelted largely in former times, and still remains at the present day a field for the employment of the few remaining iron smelters.

In lower Assam the Garrow Haths of Pulashbarree and Gohain supplied iron hoes, manufactured by the Cossyabs; and these were largely imported into Upper Assam for Government purposes. This iron from its soft or malleable nature was considered the best for the manufacture of nails, fire-arms of small size, and the inner tubes of the large cannon; the iron of the Upper Assam ores being found best adapted for swords, axes, knives, shovels and hoes, &c.

At Teeroogong hill and Hattighur thirty or forty workshops were established for the smelting of the ores, and manufacture of crude iron. These workshops consisted of a master and four workmen, who could, in twenty-four hours, turn out eight pieces of crude iron, similar to the sample now sent. The forges commenced operations in the beginning of the cold, or dry season, and continued in work for six months, when the manufactured iron of the season from these localities was delivered into the Government storehouses.

The ferruginous sands of Bosa Doyung are deposited in plastic clay, in detached beds of variable size, and scattered over a wide expanse of both undulating and level country. The beds containing the iron oxide being found at a depth of 10, 12, 15 and 16 cubits under the surface.

To find the beds containing this ore some little prospecting is necessary, and the work generally takes from four to five days (vide table No. 1). The bed being found, six men are employed as follows. Two men dig out the lumps containing the oxide, a third takes these and places them at the passage of entrance into the pit, a fifth* takes them outside, and the sixth forms them into a large rectangular-shaped heap 12 cubits long, 7 broad, and from 3 to 4 cubits high, and thus in about ten days, the labours of six men have collected in this heap about one thousand maunds of the ore bearing clay.

The heap is now divided into seven shares, which gives one share to the landlord, leaving six shares to be divided amongst the working party. The next process is the washing out of the ore, and this is accomplished in a large pit filled with water into which the lumps are thrown, and the separation of the ore is effected by stamp-

* The fourth remains unaccounted for.—Ed.

ing with the feet, this operation occupying a period of ten or twelve days.

The washing out and collecting the ore having been accomplished, the smelting process is commenced, and a furnace made after the common Indian fashion on the spot.

The operations of smelting are carried on by five of the party, one of them being the *oustad*, *ojah*, or head-smelter, whose business is to supply ore and fuel when the furnace has been heated, and to draw out the melted lump of pig-iron from every fifteen seers of ore, which he elongates and cuts (as shewn with sample sent).

The process is simply that which prevails throughout India, besides the master there being two assistants, one man to blow the bellows, and another to bring the ore and charcoal, which is thrown into the heated furnace, in quantities of a chittack of ore with its accompanying charcoal at a time, no flux being used—in this manner working day and night, with two men, as a relief, thirteen pieces of crude iron were turned out of the ore furnace in twenty-four hours. The lumps of pig-iron averaging about four seers in weight were sold for two, three or four annas a piece, according to quality and the quantity of pure malleable iron they contained.

The following is a table shewing the number of persons employed, the number of days, and the expense of digging, washing and smelting one hundred maunds of the Bosa Doyung ore.

Table No. 1.

Detail of work.	No. of men employed.	No. of days.	Total number of men.
In searching for the ore bed,	6	5	30
To dig up ore, &c.	6	15	90
To wash the ore,	6	11	66
To make charcoal,	6	30	180
Smelting the ore,	5	20	100
Grand total number of men employed,..			466

which at the rate of 1 anna 4 pie per diem is, . . . Rs. 38 13 4
 1000 maunds of ore-bearing clay produce 100 maunds
 of ore, which smelted with 200 maunds of charcoal
 produce 266 pieces of pig-iron, averaging 4 seers in
 weight, which, sold at 3 annas each, fetch,..... 49 14 0

Leaving a balance of, 11 0 8

N. B.—Presuming the foregoing table to be correct, it would appear that the out-turn of pig-iron from the ore is about 25 per cent. ; and if, as I am told, 1 piece of pig iron of 4 seers weight is the produce of a basketful or 15 seers of the Teeroogong hill ore, the out-turn is much the same ; an analysis of either of these, however, would afford the best test of their respective qualities.

The following is a table shewing the progress of the works carried on formerly in the fabrication of fire-arms and cannon, extracted, I believe, from old Assamese Government records :

Table No. 2.

No. of black-smith's shops.	Names of fire-arms, &c.	No. of fire-arms made in the month.
1	Small <i>katnul</i> , or hand-gun,.....	4
1	Large ditto,.....	2
1	<i>Pahlunga</i> ,.....	2
1	<i>Ganthea Yomoonee</i> ,	1
1	<i>Meeta Hoolang</i> ,	1
1	<i>Baghmoorah</i> (or tiger-headed mouth),	1
2	Large cannon,.....	1
4	Larger ditto,	1
20	Still larger,	1*
50	Larger ditto,	1†

* Four of this description made.

† Only one of this description made, which is the great gun at Rungpore.

Note.—Cannon and fire-arms continued to be manufactured from the year 1427 A. S. 1505 A. D. during the reign of Swarga Narain to the year 1636 A. S. 1716 A. D. in the reign of Rájáh Ruddra Singh. In the reign of Goureenath Singh that Rájáh prohibited the manufacture of the old match-lock and introduced the making of muskets.

List of specimens subsequently forwarded illustrative of the Economic Geology of Upper Assam.

1. *Kaolin Clay or Rooknunsee Peeta*.—This is the washed clay from a decomposing granitic rock, probably composed of silex and alumina. It appears to be infusible without admixture. A very short distance inland from the mouth of the Doza Panee, a small river on the upper Brahmaputra, large masses of this substance are found in different stages of decomposition, some in a state of powder and accompanied by debris of felspar and limestone rock. It can be procured in any quantity and can be brought down the Brahmaputra in small boats.

2. *Washed clay from a decomposing Felspar Rock*.—The decomposing felspar is deposited in large masses on both banks of the Degaroo river, Upper Brahmaputra, at the foot of the Northern mountain ranges; and in the same line East and West is a common deposit. The deposit is extensive, but its distance from the Brahmaputra would make its transport difficult and expensive.

3. *Washed clay from decomposed Felspar Rock or Marl*.—This is found in the vicinity of limestone, at the falls of the Namber river, Golaghát district. The deposit is large and accessible at all times, and, by means of the Namber and Dhunseree rivers, water transit is easy during the rains.

4. *Washed clay from decomposing Felspar Rock*.—This rock in a state of decomposition is found in the bed of the Namber river, under the falls, associated with the shell and slaty compact lime-

The largest of the cannon made during the sovereignty of the Assam Rájáhs is still visible within the fort of Rungpore. This cannon was presented to Rájáh Rajeswar Singh by Bohikhowa Bnr Phokun of Gowhatti.

It is fabricated entirely from Cossyah wrought iron, and is remarkably well finished, its dimensions are as follows:—

Length from end of handle to sight on the breech,	5 ft. 10 inches.
Ditto from breech to muzzle,	12 ft. 3½ in.
Measurement round the breech,	5 ft. 7 in.
Ditto round the muzzle behind the ornamented ring of ditto, ..	5 ft. 1 in.
Diameter of bore,	0 6½ in.
Total length of gun,	17 ft. 3½ in.
Thickness of metal,	0 7¾ in.

stone. The first washing of this rock is of a pinkish colour from reddish coloured specks in the stone, similar to that of the Degaroo, and the two rocks may be considered analogous.

5. *Ditto ditto*.—Ditto 2nd washing of No. 4.

6. *Washed clay from red marl deposit*.—This deposit apparently from a decomposing Felspar rock is in a state of marl on the road in the vicinity of Bur Pathur, Golaghát district. The out-crop is extensive, and the deposit looks of great extent. It is very accessible by means of the Dhunseree river and the road to Bur Pathur.

7. *Washed clay from pinkish colored marl*.—Jeypore coal measures, Upper Assam. This is not deposited in a regular stratum with the coal, though found close by. It is a deposit from a decomposing Felspar rock of which there are many varieties, and a very old deposit apparently, running along the edge of the low hills. It is plentiful and accessible.

8. *Tough clay bluish colored*.—This is the common tough clay or clunch of the Jeypore coal measures. To be had in any quantity. It makes a very good wash for walls and is no doubt a good pottery clay.

9. *Clay*.—From an extensive deposit in the bank of the Booree Dehing at Jeypore. This clay deposit apparently dips under the low hills at Jeypore, and covers a rubble containing gold.

10. *Black clay*.—Found in several localities in Upper Assam. A large deposit at the foot of the hills in Dopa Bur, near Gerghon, Seeksagur district; also visible on the Booree Dehing at Hooloo-gorie. Accessible, extent of the deposit unknown; that at Dopa Bur appears the largest deposit.

11. *Washed clay from ferruginous deposit*.—This is found in the bank of the Dibroo river, the deposit contains magnetic iron sand. The fishermen use this in colouring the walls of their houses and the ochre washed from it, is a very fine one.

12. *Tough clay*.—Banks of Dhunseree river, Golaghát district.

13. *Ditto ditto*.—Ditto.

14 to 25 (inclusive). *Tough clays*.—Of various shades and textures from the Brahmaputra bank and the Dhunseree river. These are given to shew the variety of clays procurable in the Seeksagur district, and visible on the banks of both the Brahmaputra and Dhunseree river.

These clays are first seen on the South bank of the Brahmaputra immediately after leaving Dekhoo Mookh. The bluish tough clay is first visible, and at the mouth of the Jansee crosses the Brahmaputra to Saulmarah, where an extensive native pottery work is established, supplying Upper Assam above the Dekhoo. A fine under-stratum of various coloured clays continues visible until past Kokilah Mookh, when the bend in the stream, and the sand deposit opposite Moghur, shuts them out; but I think the same clays will be found along the whole line of the extreme South bank running down into the great clay deposits of the Golaghát district and Dhunseree, where the section made by the river developes the same variety of clays, extending from what is called Mourah Mookh to Bur Pathur, and probably to Dhennapore. This clay deposit must be of great age and depth—some of the clays forwarded having been found under-lying a bank of gravel and sand 60 to 70 feet high. In many parts of the Dhunseree river, the clays have become mixed with a highly ferruginous marl, attaining to a state of sandstone. Laterites are also abundant in the bed of the Dhunseree, which shews these to be formed in the clays. An oxide of iron, consisting of small grains mixed with very hard laterites is washed from the whitish coloured clays at several points on the line of the river as well as inland. Proceeding upwards on the Dhunseree river, the land becomes higher above the Doyong river, and in the vicinity of the Namber, the clays are more indurated and of a slaty clay nature.

In the Namber the sulphureous hot springs are situated a few yards distant from the junction of that stream with the Dhunseree. At the springs nothing is seen but Felspar gravel. In the Dhunseree the next turn above the Namber, are several hot springs, containing salt. The bed of the river exhibits masses of Felspar rubble cemented together forming a hard rock, and large masses of fossil wood appear to be imbedded in this as well as lying in the stream. From the Namber to Bur Pathur, for a distance of nine miles the country is undulating with low hills, the soil bearing a profusion of timber trees, the nohar and toon the most conspicuous, and many rare and beautiful plants. Throughout this tract, which seems an offshoot from the Rengma Naga hills, there are many deep dells,

most of which according to native account contain poongs or springs of mineral water, similar to those exposed and known. The surface soil is a vegetable mould, but the small nullahs which are crossed expose clays and gravel, and some of the ascents and descents of the low hills are entirely composed of small felspar boulders and rubble. Within one and a half miles of the descent to the Bur Pathur plain at Hulgootee Jan, or pebbly brook, a fine bed of marl is exposed (vide No. 6) on one side of the nullah, a similarly coloured but more compact bed (probably containing iron) on the other side. Mr. Masters also mentioned that in the same nullah above this point there is a bed of white clay marl, similar to No. 3. The low hills and undulating ground stop abruptly, and the Bur Pathur plain is formed by these, running inland West from the Dhunseree river, turning round South and East, again meeting the Dhunseree river, enclosing a tract of land several miles in area, and mostly under rice cultivation. The deposits in the Pathur or rice-land are clays of the best description. Mr. Masters also mentions a deposit of white Kaolin marl visible in the bank of the river near one of the villages in a very convenient spot. Water is always abundant in the rice-land, several small streams passing through it, and one or two natural springs of pure water rise up directly under the fall of the high land. Viewed from the North, on entering the Pathur the scenery is very pretty, and altogether the site is promising and ought to sustain twice the number of inhabitants it does. A report on the several thermal springs which are known in the Golaghát district has been forwarded by Mr. Masters' Sub-assistant in charge. The heat of the water in the two I have visited, he makes 112° . The Namber river springs smell strongly of sulphur when fresh taken, and the water issues out of a gravel deposit in large quantities. No attempts, that I am aware of, have been made to dig in the direction of the spring, to ascertain the nature of the underlying strata, the upper gravel of felspar being evidently brought down and deposited by the river. From the continuous deposits of bluish hard clay in the Namber, the probability is, that the waters pass through this from beds of limestone, perhaps underlying this clay; the waters of the springs called bálee poong in the Dhunseree, and not half a mile distant from these, do not reach the

surface, but on digging through the sand, the water is found plentifully, and smells strongly of muriatic acid, affording, when immediately boiled in a small flat dish, a residue of sharp tasted salt.

Proceeding up the Namber river to the first falls, a distance of about two miles, no rocks in situ are visible on either side, only clays, and deposits of largish felspar rubble, the bed of the river being small felspar gravel, holding a great quantity of black metallic sand. In approaching the falls there are one or two springs, or jalyes, on the West or left bank of the stream. The fall itself is insignificant, being formed by a ridge of granite about 15 feet in height, over which the river leaps. On the right bank the low hills commence a short distance before reaching the falls, and in the bed of the river immediately under these the different limestones forwarded are found, together with the decomposing felspar rock, affording the specimens, Nos. 4 and 5 of the list, together with hard slaty clay, probably calcareous. The mass of granite forming the fall passes from West to East, it does not look stratified in situ, but some of the fragments break off like gneiss, and might be called stratified granite; it appears very durable, however, and not easily broken. In colour and its component parts it looks much like the red Aberdeenshire granite and takes a good polish; the breaking up of the slaty and stratified portions of the strata no doubt affords the black metallic sand of the Namber and Kallianee rivers, and both sands afford a good iron, if properly smelted. Immediately above the fall, the bed of the river is one continued layer of large boulders, which, however, have not been examined, but most probably they belong to the granitic formation. Finer, and larger falls are said to exist two days' journey further up the Namber river, but they are not very accessible. I have failed to find any traces of gold in the metallic sands of the Namber river. The sands of the Dhunseree river, however, and particularly below the mouth of the Kallianee river (which rises in the same range of hills as the Namber) contain gold according to native account, also the Kallianee river was in former times considered a prolific gold stream, the washings having been carried on close under the hills.

26. *Decomposing granite rocks, &c.*—High bank of Brahmaputra at Choonpoora. In the high bank of the Brahmaputra at Choon-

poora, boulders of this description are found, but they have been deposited there ages ago, probably from the vicinity of the limestone strata holding the decomposing property.

27. *Similar to proceeding (unbroken).*—Ditto ditto. Ditto ditto.

28. *Deposit from Brahmaputra after heavy rain.*—Found principally in the inland offshoots and *churs* of the Brahmaputra. It is of the nature of rotten stone. This is found sometimes in large quantities and requires to be scraped off as the river falls, and is evidently washed down from the decomposing rock associated with the limestone.

29. *Washed from calcined lignites, also of the nature of rotten stone or crocus martis.*—Large masses of true lignite are imbedded in the soft sandstones of the Booree Dehing, and large quantities of the same kind but less compact are to be procured in the bed of the Dhunseree.—From the true lignites of the Booree Dehing a substance suitable for pigments, as also for polishing metals, is procurable. The decayed fossil wood of the same localities (from a state of chert or flint) also supplies excellent rotten stone capable of giving the highest polish to precious stones. The Burmese lapidaries invariably use this substance in their lapidary work.

30. *Compact rock, supposed dolomite or magnesian limestone.*—This limestone is found both in the Brahmaputra and Dora Panee, but principally in the latter stream, and seems to be associated in situ with the accompanying granite and felspar rocks, forming the Kaolin clay, and in this case is a valuable addition to these as containing magnesia. This is procurable along with the Rooknunsee Peeta and decomposing granite and felspar rocks of the lower ranges, Upper Brahmaputra, and probably thus associated causes the decomposition of these rocks; some of the varieties of this marble, are yellow, streaked with dark colored delineations. All the rocks of this locality contain a quantity of very bright colored whitish pyrites, or sulphate of iron—the primitive lime marble in particular containing large quantities of bronze coloured and white pyrites of all the varieties of this mineral.

31. *A variety of No. 30.*—Ditto ditto. Ditto ditto.

32. *A variety of Nos. 30 and 32.*—This is also found in the Upper Brahmaputra of a purer white than the rocks of the same kind in

the Dora Panee. The rock is more easily frangible and appears to contain more magnesia. Ditto ditto.

33. *Primitive limestone*.—This rock is in situ in the first ranges of the Upper Brahmaputra from the Dehong to the Brahma Koond. The specimen is a good sample of the mineral as it might be required for purposes of ornamental work, particularly for pavements and table slabs. Boulders of the limestone for mortar purposes can be procured in any quantity during the dry season. The boulders of a large description of this, and the magnesian limestone, and the variety passing between serpentine and carbonate of lime with handsome granite, are found close up to the Northern mountains, but they could only be brought into use for ornamental work by having slabs cut on the spot which might not be a very difficult matter, provided protection could be given to the workmen.

34 and 35. *Shell limestone*.—From under the Namber falls. This is in large quantities and only requires to be quarried.

36 and 37. *Limestone*.—Found associated with Nos. 35, 36, and decomposing felspar and slaty clay. These limestones in their various beds, of which the extent is quite unknown, probably contain the decomposing power which affects the granite and felspars in the same manner as on the Upper Brahmaputra.

38 and 39. *Iron*.—Smelted from the ore (oxide of iron sand) washed from the plastic clays of Golaghát and Gilikha in the same district. These ores have been deposited no doubt along with the clays from the breaking up of granitic rocks under the influence of water, vide specimens, Nos. 26 and 27, the latter containing a quantity of metallic sand. But it is evident that in course of time, what was originally magnetic and non-magnetic iron sands, has become oxidized and altered. The appearance now being that of natural exuvixæ. Both these ores are found in extensive beds, throughout the Golaghát division inland, as well as on the banks of the Dhunseree river at Golaghát, and Dehing Gohainghát. The natives seem to think that the resources of these ores are inexhaustible, but this requires investigation. The quality of the ore is considered good, and, even under the rude processes adopted by the iron smelters, the manufactured iron ought to undersell that of the Cossyah or codal iron, if not the English bar iron, though the convenient form, of

English iron is always an inducement to smiths to work it into different articles of agricultural use, rather than take the trouble of working up their own native blooms, which also is more difficult to effect from the want of proper tools.

I am led to believe that the Golaghát ores furnish a very good percentage of *cutcha* iron—twenty seers of charcoal, and twelve seers of ore, producing five seers of iron, forming a bloom, black, heavy and sonorous; but like the Cossyah iron blooms, I have found on trial, that they lose between fifty and sixty per cent. before being made fit for steel, or the formation of any cutting instrument. I am not sufficiently versed in the statistics of iron to offer any explanation on this point, beyond the idea, that the native furnaces do not contain sufficient heat to smelt thoroughly any ore which holds either quartz or clay; nor do ores of this kind answer in any furnace without a flux, for which their furnaces do not appear to be adapted, as I am inclined to think that a proper proportion of limestone introduced into a native furnace would cause it to run. However 45 per cent. from any iron ore is good, and there is no reason why even the native method of smelting should not be improved, so as to give 30 per cent. of really valuable malleable iron. The ores of the Golaghát district certainly offer a fair prospect of remuneration to the iron smelter, and I see no reason why with such resources at command, Cossyah iron codals, which sell at twenty rupees per maund need be imported.

40. *Iron*.—From clay iron ore, Jeypore. This ore is not that which is found deposited conformably with the coal, but is found in beds throughout the whole range of low hills flanking the Naga mountains; and even amongst the clay slates, in these higher ranges we find the same strata. Reniform nodules are generally lying imbedded in a marly clay, and in some localities quite exposed. The amorphous lumps, are generally imbedded deep in the soil of the low hills, and in former times, this ore seems to have been excavated from the Tipam hill, the locality of a now extensive tea-garden belonging to the Assam Company, where the plant grows most luxuriantly. The present sample is from an amorphous clay iron ore, or hydrate of iron, dug from the face of the hill, forming the gorge of the Booree Dehing river at Jeypore. The quantity of

scoriæ lying about, shews the extent of the smelting in former days, but whether from this ore, or from other sources along the line of the river, I cannot say ; my opinion is that these ores would answer well, smelting them on the English plan, but I think the smelting of clay iron ores like these could not be attended with either good or profitable results on the native plan.

41 and 42. *Iron*.—Smelted from the two descriptions of metallic sands in which gold is found in the Brahmaputra and in the hills inland from Jeypore. The difficulty of fusion without addition is a great drawback to the smelting of these ores, for they afford excellent iron, easily converted into steel. The magnetic black sand will not fuse without the addition of glass, and cannot be managed in native furnaces. The magnetic iron fuses, and no doubt, with sufficient blast heat, would furnish a good proportion of pure iron, I have not, however, completed my trials of smelting these ores so as to give a correct opinion as to their usefulness.

43 and 44. *Washed gravel*.—From the Degaroo and Tedding rivers, Upper Brahmaputra. These are no doubt metallic, but in all probability contain iron only.



Narrative of the Travels of Khwajah Ahmud Shah Nukshbundee Syud who started from Cashmere on the 28th October, 1852, and went through Yarkund, Kokan, Bokhara and Cabul, in search of Mr. Wyburd.—Communicated by the GOVERNMENT OF INDIA.

At the request of Major Macgregor and Colonel Mackeson, I on the 28th October, 1852, taking with me six horses and six servants started for Ladakh, which it took me twenty days to reach owing to the quantity of snow (it being now winter) on the Ijogicbal mountain.

In the Ladakh valley the climate is very cold and only produces “*jorve*” and wheat, which can be obtained at every stage. Rice is brought from Cashmere and Manoo (I do not know where the latter place is.) It is sold at 4 or 5 seers for the Rupee. Travellers and strangers are hospitably received by the people. It is under the

rule of Maharajah Golab Singh, and the people live generally upon *tulkair* (parched wheat and barley) which they take with black tea (the latter is brought from Lassa) and *ghee* from Cashmere.

When they once put on their clothes they never take them off or change them until they are worn out. They are generally of black *puttoo*.

The people are idolaters and worship a god designated by them 'Manee.' All the brothers of a family have one wife common to them. They eat raw meat. Fuel for burning is scarce, and they use the dung of animals for fuel.

From Rodukh and Chantun they bring the shawl wool, which is carried upon goats. From Lassa they import green tea, musk-bags and *judwa*, (a medicine.) From Ludia they procure cloth, opium, spices and leather. From Yarkund *baraj*, China ware, and *lowar* (silk).

A few *Ferozas* (Turquoise stones) imported from Bokhara are found, used by the women as ornaments. The females go at all seasons of the year with uncovered heads.

Travellers, owing to the necessities of life being all imported, find living in the country very expensive.

Apples and plums grow here, and the trees are principally the willow and the poplar. I remained at Ladakh for a month and eighteen days, awaiting the arrival of a *kufilah*, and arranging for the procurement of animals for my further progress towards Yarkund. Travellers are obliged to carry every thing with them, nothing being procurable on the road, as it passes through an unpopulated country. The hire of a horse from Ladakh to Yarkund in the winter is 100 Rupees. These animals are all of the Yarkundee breed, and come in *kufilahs* from Yarkund, loaded with goods. For each animal they have to take a double set of shoes. The ordinary dress of travellers is a *posteen* and *senabund*, and coats of *puttoo*, gloves of leather, and long felt boots, they carry with them on their horses a carpet to lie upon and a blanket to cover themselves. The country is too cold for cotton clothes of any description.

On the 7th of January I started for Yarkund, the road to which is through a rocky barren country, and through defiles. In spring, about the time of the equinox, it is generally very stormy, and

there is a great deal of snow; the road is blocked up for some three months.

From Ladakh to Lamakeet is five days journey. A stream coming down from the direction of Ladakh and known as the Shahyeak, flows past the latter place; this was fordable. Lamakeet is merely a halting-place, it contains a few huts.

From Lamakeet to Ak Musjid is thirty marches. The country is totally uninhabited. The Kurra Koorum mountains have to be crossed on the road. There are two roads, known as the Maryhan and Ekdan; the former is the summer road. There are three *kothuls* on this line. The tract between the Kurra Koorum range and Lamakeet, a distance of three days' journey, is called Dubsun, which, during winter, is blocked up with snow, rendering this road impassable. The Ekdan (snow) or winter road was, according to the people of those parts, blocked up for twenty-two years, and water accumulating above it, caused the snow at last to give way and they say that this was the cause of the great flood of the Indus in 1840. This is the route almost always now followed by the *kufilaks*, and is two marches shorter than the other.

I witnessed a curious phenomenon on this road; the snow while melting did so at some distance from the ground leaving masses in the shape of large trees, from which hung icicles, and between which the traveller moved along; and it seemed as if you were in the midst of a sea of crystal, from which innumerable colours were reflected, and moreover, on the top of the snow were large rocks and stones of a red and white colour. We have to pass through this sort of country for half a day's journey. The Kurra Koorum is a small mountain, but when a wind which is known as the *sootuk*, blows, the air becomes very rarified, and breathing becomes difficult. During the spring the north winds prevail and there are very heavy falls of snow, which frequently oblige *kufilaks* to return from whence they came. The *sootuk* frequently causes the death of horses; if an animal dies on the road and there is no spare one for his load, it is buried and left there until its owner can go back and bring another from Ladakh. From the Kurra Koorum to the Akhtab mountains a journey of three days, there is no water on the road, and frequently when bad arrangements have been made and

no water has been carried along for the animals, horses on arriving at Akhtab drink so much that they die; the road traverses a pass through the Akhtab mountains, through which there are two roads, the Kullian and the Kookrai. On the Kookrai road, water and fuel are procurable, but this road is difficult in the summer, as it winds along the beds of torrents, at that season swollen by the melting of the snow. The people of Kunjoot, robbers by trade, infest this road during the winter, but it is free from them during the summer months. On account of these banditti, *kufilaks* frequently go round by the Kullian route, which is longer and more difficult, besides being dangerous from the continual moving of glaciers. It takes some six or seven days to get through the Kullian, after which four days' march brings you to Kurgulluk, a large place containing a bazar, and well populated. Here every thing is procurable, being brought from Yarkund.

From Kurgulluk to Yarkund it is three marches through a plain cultivated country, irrigated from hill streams. About half way you cross the Yarkund river, which, during winter is frozen and crossed on the ice. At present, there is a ferry with one boat. This of no great breadth, but is very rapid. The country is studded with numerous villages.

I reached Yarkund on the 17th February and remained there and in its vicinity for three months, during which period I was making enquiries regarding Mr. Wyburd, and sent a mau for the same purpose to Aksoo distant eighteen marches. At every stage on the road there are buildings called *Wurtung*; where the authorities have men from the city to carry dâks from Yarkund to Aksoo, and from Aksoo to China, to Biejun (Pekiu). To this place it is six months' regular journey, but the dâk arrives at Pekin in twenty days, an answer arriving to a message from Yarkund in forty; daily communications are passing between the two places. The dâk men are mounted on their own animals; for the performance of this service they are exempted from taxation.

Half way to Aksoo, nine marches from Yarkund, the Chinese have built a new city called Inyshuhr (the new town) which is situated on the Kashgur river, here four roads meet, viz., one from

Kashgur, another from Yarkuud, a third from Aksoo, and a fourth from Khoottan (a province of China.)

Whenever an army is required for any purpose, it is sent from this city. The Mahomedau city and the Chinese fort are separate. In the latter there is a garrison of from 15,000 to 20,000 men, they have guns but no sowars (cavalry). Their troops are all footmen.

Aksoo is a very fine city, containing springs of water. The climate is temperate. The residence of Seduk Beg, the present governor, is on a height in a fort separate from the city, at about the same distance as the Bala Hissar is from the town of Peshawur.

From Inyshuhr to a large place, Oochtoorfan, on the direct road to Pekin is three days journey. Travellers are not allowed to go by this route.

Najmoodeen, the man I sent to Aksoo, returned without being able to hear any thing of Mr. Wyburd.

Yarkund is a large walled city supplied with water from the Yarkund river, distant some three or four koss. It is a great place for fruit; here grapes, pomegranates, apples, melons, mulberries, plums, aloochas, cherries, and quiuces, all grow luxuriantly. Yarkuud is such a dusty place that the new moon cannot be seen, and when it rains, it rains mud; for this reason people do not wear any white apparel; their dress is long and loose; they wear boots. Travellers and learned men are much respected. The king of the country is always a Mahomedau, to him the people look for justice. The Chinese governor is designated the Umban, and his deputy Dalocah; they reside in a fort along with their troops who are all Chinese, and of whom there are some 6 or 7,000 here; the "Khalaie Shuhr," (Chinese fort) is separate from the town. They have little or no communication with the people of the country. Whatever they require they procure through the Mahomedan ruler of Yarkund. After five days I went and paid my respects to this authority, whose name was Afreedond, and title "Wauk;" he is the executive ruler and decides all matters after referring them to the Umban. The latter signs all passports. The actual walled city of Yarkund is not so large as that of Peshawur, but there are extensive suburbs outside. Horses are very numerous here, but the troops being all

Chinese unaccustomed to horses, accounts for their not having any cavalry.

The people generally are contented and well pleased with their rulers. There are no other taxes in the country save the land-tax, which amounts to about one-tenth of the produce.

After making full enquiries and not getting any information regarding Mr. Wyburd, I started for Kashgurb on the 27th May, and sent Myeefoodeen to Khoottan. From Yarkund to Kashgurb the country is cultivated, and along the road at regular stages the dâk is kept up. After three marches I arrived at Inghissar, a small town, having a Chinese fort and garrison of about one thousand men, situated on a commanding position. Water is abundant and fruits plentiful. I remained here a short time, and then proceeded to Kashgurb, which I reached after three days. I remained at Kashgurb, in order to enquire after the fate of Mr. Wyburd, for two months. The reason of this delay was as follows. The road between Yarkund and Kokan was closed in consequence of the ascendancy of Bizong Khoja, whose ancestors formerly ruled over Yarkund, Aksoo, Kashgurb, Khoottan, Inghissar and Oochtoorfan; the Umban of Kashgurb having by order of his superior the Yarkund Umban, ceased to grant passports to travellers by this route; and also because Aksukol Ingamat Khan, a deputy of the Khan of Kokan, who, according to custom, with the sanction of the Chinese authorities, was collecting tribute from certain subjects of the Kokan Khan (traders residing in the city of Kashgurb) had been ordered, on account of some former disputes, to desist from doing so. For these reasons the Kashgurb Umban refused to grant me passports until he received authority for so doing from Yarkund. Nyamnt Khan also informed me that I could never get to Kokan without first receiving the sanction of the Khan of that place to proceed there, so I accordingly despatched Kasim Jan, a man of my own, with presents for the king; asking for his permission to proceed; and I myself returned to Yarkund to get passports, which I had the good fortune to obtain through the influence of Afreedond Wauk, the governor. Here I met with Nujeeboodeen, who had returned from Khoottan having been unsuccessful in obtaining any information regarding Mr. Wyburd. From Yarkund to Kurrakash

in Khoottan is nine days' journey. Khoottan is a district containing six towns, viz.: Knrrakash, Ilchee, Uronakash, Shukra Cheera, Knrria, and Tagh.

Knrrakash. There is a large river near to this place which is crossed by boats, and the horses here are taught to swim.

Ilchee is the residence of the Umban of the district; the name of the present man is Ulsh Beg,

Uronakash. From Ilchee this place is distant half a day's journey, and between the two the Uronakash river has to be crossed; in the season when this is shallow, the people of the country find *johurs*, which are described as precious stones, which when clear are valued at their own weight in silver. They are used by the Chinese for making handles of knives and plates of different descriptions.

Shnkra Cherra. In this place they manufacture a great deal of silk and many carpets.

Kurria. This is also a great place for silk.

Tagh. The climate of this district is good; grapes are dried here to a great extent; the ordinary fruits of Yarkund are plentiful.

The men of Khoottan are extremely handsome, and by order of the emperor of China, the whole of the population have to go during the winter months to a place (name forgot) distant forty days' march, and there dig for gold, for which they respectively receive seven *puls* of silver (equal to about 30 Rs.) whatever be the result of their operations; the gold that is collected, all becomes the property of the government. All over the Yarkund country, Chiuese coinage is in general currency.

From Yarkund, going by Aksoo, it is fifty-eight days' journey to Ihl, near to which the Russians have their frontier Cantonments, the head Chinese functionary in this place is called Joongtaug.

*	*	*	*	*	*	*	*	*
*	*	*	*	*	*	*	*	*

There are no Russians in Ihl itself, but this is one of the routes by which Russian goods find their way into China, and Chiuese commerce passes up into the Russian territories.

After receiving my passports I returned to Kashgurb where I arrived on the ———, here I found that Kasim Jan had returned

with a letter from the Khan of Kokan, and I remained for about another month, making arrangements for my onward journey as I had to go without a *kufilah*.

Kashgurb is a considerable town surrounded by a fortified wall and supplied with water from running streams. To prevent an enemy during the time of hostilities from cutting off the supply, there is an extensive tank inside the town, large enough to keep the people supplied; one man holds the special office of keeper of the tank; the town is surrounded by numerous gardens, and tanks, and private residences. The Chinese fort is distant from the town about three koss in the direction of Yarkund. The builder of this fort was severely rebuked for building it in the direction of Yarkund in place of towards the frontier. The climate of Kashgurb is salubrious and fruits plentiful. The people have great intercourse with the Kokanese, and they are very similar to the latter in their manners and customs. The boundary of the Chinese territory extends to one march beyond Kashgurb on the Osh road.

On the 18th December I left Kashgurb, and after twenty-eight days' march through a mountainous, difficult wild country inhabited by wandering tribes, I reached Osh in the Kokan territory. I carried all my provisions, &c. upon five mules. There are no great streams to cross on this route, but about half way you cross over the Temkhdewan mountain, which is the most difficult portion of the road.

Osh is a small city near a hill called the Tukhti Suliman, on the top of which is erected a musjid. In this hill there is a large cavern which can only be entered by a man on all fours; in the midst of it water is found in a sort of tank. From the summit of the Tukhti Suliman, you have a commanding view over all the city which is at the foot of it. It is a dry hill without any vegetation upon it. The climate of this place is salubrious. From Osh it is two marches to Moorghela, another small city with an extensive bazar, and many hummams, schools, and seraies, a plentiful supply of water and numerous gardens; it is situated in the midst of a well cultivated country. From Moorghela to Kokan Khas there are two roads, the one over a "*murah*" or desert, and the other through a cultivated tract. It is distant two days journey, I arrived at Kokan on the —.

Kokund or Kokan is a large and thickly populated city ; the houses are built of pucka bricks ; they generally are only of one story, though there are a few of two or more. Houses here do not last long, owing to the dampness of their foundations ; the soil is very moist, and during the winter there is a great deal of mud in the streets ; it is so bad that people can only move about at that season on horseback, and horses frequently sink into it as deep as their shoulders ; when storms of wind coming from the west prevail, they dry this up to a great extent. The city is a walled one ; the principal officer in it, besides the Khan is the "Ming Bash," or prime minister, who performs the general duties of the Government ; the military and civil establishments are all mixed up together. There is abundance of water every where, and in the city there are numerous fine bazars and extensive seraies.

The name of the present ruler of Kokan is Khuda Yar Khan, he is a man of about 25 years of age, he has a brown beard and only wears his turban out of doors. His palace is situated in a fort which is separated from the town by a stream ; it seems to be a place of no strength and has no command over the town ; it has two gates, across which there is a chain, which has to be removed each time to admit of the ingress or egress of passengers ; over one of these there is a balcony in which the king locates himself when he reviews the troops or upon high days and holidays. Both in the court yard of the palace and outside of the town there are guns. The army are armed with muskets, lances, knives, axes, and swords on the end of muskets ; they consist entirely of Cavalry with the exception of a new Regiment of Infantry which they are forming and which may be some 3 or 400 strong ; there is no regular army, but the troops consist entirely of Ooloos or Militia. Many landholders hold their lands from Government on condition of their being ready always to turn out a contingent when so required. The Kokanese under Kasim the Ming Bash, when they were defeated by the Russians at Ak Musjid, were about 10,000 strong and lost 20 guns, all that they had with them. These guns are drawn by horses two or three to each, they have men kept specially as gunners ; gunpowder is made in the city ; I do not know where they get their sulphur from, but there was lots of it exposed for sale in the Kokan bazar ; saltpetre is manufactured on the spot.

On the occasion of great festivals, the Sowars amuse themselves at a game called "Koke Boree," a goat is killed and taken outside the city to a plain and a goal is marked off at some distance, the Sowars make a rush and there is a regular scramble for the goat, or for parts of it, which are immediately carried off to the goal, on arriving at which the flesh becomes the property of the carrier of it. There is sometimes such a resolute struggle for the pieces that men frequently get killed. The king himself sometimes joins in this pastime. They are fond of horse-racing, but practise it (by their own account) to enable them by their fleetness to escape from pursuing enemies; they all wear boots with large iron spikes on the heels of them; as also small caps (a sort of fez bent to one side) which out-of-doors they cover over with a *pagree*.

* * * * *

Ak Musjid is forty days' march from Kokau. - In the Kokan bazars, Russian goods and merchandize of all descriptions are common, the principal of which are nauka, (common cotton cloth,) chintzes, turbans, and fine cloths, fur, trays, boxes, &c. The principal road is by Ak Musjid. The tax upon these articles is collected at Tashkund, distant five days' journey from Kokau.

The exports of the country are Kokau chintzes, which are here manufactured of a very fine quality; the goods are sold to Badra-nashar merchants who carry them on camels, which are numerous; no Russians ever come themselves, there are only two in the country, and these were prisoners captured by Kasim at Ak Musjid. These unfortunates are now slaves. I saw them and, upon seeing their circumstances, it struck me that they might be the Europeans of whom I was in search, but I was soon undeceived. At Kokan I made every enquiry after Mr. Wyburd in all the bazars and seraias, and from the people of influence. I also sent a servant by name Abdoolla to Tashkund, he returned without being able to procure any information. The only intelligence I received of any Europeans ever having been here were of Messrs. Martin and Allen,* who

* The Syud shewed me a scrap of paper which he got, and I found it was a good character given to a servant by Dr. Martin Honigberger, now in Cashmere, who formerly traversed these countries. The other name, Allen, is I suspect meant for that of Lieut. Conolly still called by the natives of Kokan "Khan Ali."

arrived within the reign of Mahomed Alli Khan, the late Khan, about fifteen years ago. The former departed and took the route by Russia, while the latter returned to Bokhara. I now took my leave of Kokan and started for Bokhara, the first stage was, 1st, Berharuk ; 2nd, Mharrum ; 3rd, Khojund, a town situated on the river Syr, having good bazars and many mosques ; here also I enquired after Mr. Wyburd without success. 4th, Ribat, (a fort ;) 5th, Arra Suppah, which is situated in a hollow on both sides of a stream ; the Mullick of the place has his house on an adjacent eminence. This place is on the boundary between Bokhara and Kokan, paying tribute to neither, though nominally subject to Kokan. We had passports from the Khan of Kokan to take us as far as this, after which we proceeded without any. 6th, Ijour in the Bokhara territory. 7th, Kirghizwad. 8th, Jeezukh, a small town of which Kunnatshue is the present ruler. Travellers are stopped here, their baggage examined, and intimation of their arrival sent express to the Khan of Bokhara. 9th, Boolak Tash. 10th, Peshkobrook (five bridges). 11th, Samurkuud, a large town situated on a stream of the same name, a tributary of the Oxus. This was the capital of Timour Sháh Koorghauee, in whose time there was a pueka bridge across the river, the remains of which now exist ; there is a tablet upon it bearing date 986 Hegira. It contains many fine old mosques and has numerous sereaies and schools, the king of Bokhara makes this his summer residence. From Samurkuud there are good roads to Tashkuud and Shubrasulz, the former distant fifteen days' march and the latter some five or six. The people of the country are generally pleased with their rulers and happy under their rule ; there is little or no oppression. Not being able to learn or hear any thing of Mr. Wyburd here, I proceeded on my journey.

12th, Dhola,	} The road runs through a well cultivated district, producing wheat and grain of all sorts, and irrigated by canals from the river ; seventeen marches from Kokan to Bokhara.
13th, Kutta Koorghau,	
14th, Koosh-house,	
15th, Ak Chali,	
16th, Royi,	

On the 1st of May I arrived at Bokhara, and put up in Muhulla Kasigram (potters) for a period of one month. I continued making enquiries in every direction regarding the fate of Mr. Wyburd. I

met one person, that I at first thought might be he, a stranger who would not tell his name to any one, but upon my shewing him Major McGregor's English letter that I had with me from him, he could not read it, and moreover I discovered that this individual had spent some ten years in Cashmere, which convinced me that he was not the man I was in search of, besides which, this person had not the appearance of a European.

It is notorious in Bokhara that the king was the murderer, or rather caused the murders of Conolly and Stoddard.

Bokhara is a densely populated city, in the summer it is very hot and in the winter extremely cold ; there are stone-tanks in every street ; these are filled by water-cuts from the river, but for three months of the year, during which the leaves of the mulberry tree have been decaying in the water, people who drink from these tanks become unhealthy, and suffer much from the Guinea worm, which is a common disease in the country. There are several physicians in the city who are great practitioners in curing it by extraction of the worms. Water for the king's private use is brought from a great distance. In Bokhara are found merchants from Persia, Oorgung, Cabul, and Kokan, each of which places have their respective market-places. The Jews have also a separate division. The bázárs are clean and kept in good order, and well stocked with merchandize of all descriptions. There are fifty seraies and three hundred and sixty musjids ; the town also is divided into three hundred and sixty mohullas or divisions. There are numerous hummams or baths. For every division of the town, the king has a news-writer, who supplies him with daily information of all that occurs, and weekly reports are sent in the same manner from the country ; for this reason the people fear him greatly, as he is acquainted with all their transactions. The present ruler Behadoor Khan styled Syud Ameen Nusseeroollah Khan is about fifty years of age. No great friendship exists between the governments of Kokan and Bokhara, but I know that an envoy went to Bokhara during my stay at Kokan, as on the road I met him returning accompanied by an envoy from Bokhara. Both in the Kokan and Bokhara states, gold and silver coins are coined and are current, the people are generally well off, though the subjects of Bokhara are the wealthiest, owing to their having a few

years ago plundered the Kokan country with an army. There is a brother of the Khan of Kokan's now at Bokhara; he had a dispute with his brother and sought refuge in Bokhara. There are some regular troops at this place which are drilled by Summund Khan, a Cabuli. The horses of Bokhara are superior to those of Kokan; I saw no Russians at Bokhara, and know it to be an ancient law that they are not allowed to travel within the boundaries of this state. The Russian *kufilaks* come direct to Bokhara and have to pay heavy duties upon goods upon their crossing the frontier. Not being able to procure any information regarding Mr. Wyburd, I suspected that perhaps he might be in prison, and so made friends with Meer Shah, the keeper of the prisons, from whom I learnt, and I feel confident, that no foreigner was there in custody; so leaving Khwajah Mahomed Shah, one of our fraternity, to continue the search and make enquiries, and with instructions to keep me informed if he should learn any thing about Mr. Wyburd, I myself started on my way back.

From Bokhara to Cabul.

On the 2nd June I left Bokhara.

1st stage, Mimleck. If you leave early in the morning you reach this place in the afternoon. At this season of the year it is so hot that people ride upon camels and not upon horses.

2nd, Kraool, water from small streams, country cultivated, provisions for cavalry and infantry plentiful.

3rd, Khojah Umbanik, left at sunset one night, and by day light next morning arrived here on a camel. Water here from a stream.

4th, Khasan, about the same distance as yesterday.

5th, Kuslice, a small town subject to Bokhara, from this place a road branches off to Shukur-i-Sulz, distant five marches.

6th, Shore Koodook; here water is procurable from a well; country now barren.

7th, Chul Boor: this is only an encamping ground; the water for the supply of travellers is collected in a tank, it is all rain water, and very little of it. (If an army was to move by this route they would have to carry all their water along with them); country sandy desert.

8th, Banks of the Amoo or Oxus. From Hushee the road all the way to the river traverses a sandy desert; there is no village or city

here ; there are two boats at this ghat (the property of the Bokhara king) ; the breadth of the river is very great ; you cannot distinguish a man's features across the steam ; it is more than four times the breadth of the Jhelum at Sounuggur ; one boat can make but two trips in the course of the same day ; all the *kufilaks* cross at this place. It is three marches from this ferry to Balkh : upon crossing the river the aspect of the country quite changes, you are now in a cultivated country covered with villages tolerably populated, I forget the names of the halting places, provisions of all sorts plentiful, even for an army ; there are no Seraies for travellers.

Balkh is an old ruined city, containing the remains of many old buildings. Hot winds blow here, as also occasionally the Simoom ; for fear of the latter, travellers seldom stay at Balkh itself but go on to Muzaree Shureef where there is a well known Izeartut and also a town. This is now the residence of Sirdar Ufzul Khan ; it is considered healthier and cooler than Balkh itself. I could hear nothing of Mr. Wyburd here, so on the 23rd June I went a long night's march to—

1st, Yarb Kooryhan, this is a small city which is also called Khoollum ; the present ruler is Mahomed Shureef Khan. It is a cooler place than Balkh and the country is irrigated by numerous hill streams.

2nd, Lungi, a short march through hills. A tax called Khurygya is here levied upon every horse.

3rd, Ghuznee Kuk, to-day's march is good for camels, and even for guns, which were taken up by this route when Mahomed Shureef Khan was turned out.

4th, Char Baghi Sultan, country hilly, road difficult, crossing many streams, no provisions to be got.

5th, Hybuk ditto, ditto.

6th, Saibagh.

7th, Khoorum.

8th, Rowee.

9th, Doab.

10th, Budder.

11th, Kamurd.

12th, Saighan.

13th, Akraubuk.

} Water is plentiful, road tolerable for camels, provisions scarcely procurable, road passes up and down hills during the whole distance.

14th, Bumam, here are the remains of an old city formerly called Golgoolla, it was destroyed by Jengh Sing Khan.

15th, Lopchi.

16th, Kaloo, this is a very difficult march.

17th, Gurdun Daver.

18th, Takanah.

19th, Kote Ushnoo.

20th, Cabul.

This route passes over Dunda Shikun (breaker of teeth) and the Kaloo mountains as also over the Purypilan. The inhabitants along the whole route are notorious robbers, and for this reason *kufilaks* are always obliged to travel by day, but have even then always to be on the look out. Ghee, wheat, barley and fuel are procurable in places, but provisions are altogether generally scarce.

I arrived at Cabul on the 12th July, stayed there some time and then came by the regular marches to Peshawur, where I arrived some ten days ago.

The above information was taken on the 22nd November.

PROCEEDINGS
OF THE
ASIATIC SOCIETY OF BENGAL,
FOR JUNE, 1856.

At a monthly general meeting of the Society held on the 4th instant, at the usual hour,

A. Grote, Esq., Vice-President, in the Chair.

The proceedings of the last meeting were read and confirmed.

Presentations were received,

From Lieut. A. Trotter, a collection of fossils from Kohat.

On the proposition of Captain Thuillier, seconded by Mr. Woodrow, the best thanks of the Society were voted to Lieut. Trotter for the valuable collection of fossils sent by him.

2.—Some drawings of fossil bones from the same district by Lieut. Garnett, Engineers.

Professor Oldham read the following extract from a letter of Lieut. Garnett, Engineers, regarding the fossils, sent by Mr. Trotter.

“They have been selected as the most portable, and at the same time characteristic specimens of the fossil fauna of the valley of the Indus. The extent of the bone bed in this part of the Indus, as far as it is at present known, is limited to about eighteen miles of the river’s course from the village of Choorlukkee to the mouth of Kohat Towy. Fragments are sometimes found five to seven miles from the banks of the river. The great depth of the ravines near Kooshalghur, and indeed all the way along both banks of the river, facilitates the search for the bones very much ;—some of the Khudds are 200 feet and upwards in depth. The tertiary beds here consist of a softish sandstone, generally of a light grey or green tint, with partings of red and grey marks. The strata have been slightly tilted since deposition, which has caused the sandstone to form parallel ridges of from ten to sixty feet high all over the valley.

These ridges of rocks have one side steep like a wall, whilst the side to which they dip is at a tolerably gentle incline. The dip of the strata is always conformable to that of the higher ranges in the vicinity. The whole of the valley of the Indus is highly interesting in a Geological point of view, but peculiar interest attaches to the part about Kooshalghur since the discovery of these fossil remains of mammalians and reptiles of the Tertiary period. I discovered the first bone accidentally in laying out a road between Kohat and Kooshalghur in 1852, since then several thousand fragments have been brought to me. The people of that part of the country have been encouraged to search for the bones, and now nearly every villager at Kooshalghur has become a collector. Both men and children hunt for them when not employed in the fields. They call this "the harvest of bones." I have no doubt strata of the same age will be found on examination to extend along the greater part of the upper valley of the Indus. Mr. Greenough's map shews that they appear again in Scinde and near the embouchure of the river. In conclusion, I will only add that I shall be very happy to forward any interesting specimens which come to hand to the Asiatic Society at Calcutta, and also to supply any information in my power concerning these fossil remains, and the district in which they are found. As my professional duties afford me no leisure for prosecuting the study of the subject, I hope the Society will afford me some information regarding these fossils—they evidently belong to animals of several different types, and I am anxious to know with what known animals they are identified, or if referable to unknown species, what conjectures may be formed concerning them. With this view, I have numbered all the specimens sent, and have kept a duplicate copy for reference."

Mr. Oldham pointed out the great importance of obtaining further collections of fossils from these deposits.

3.—From H. Haughton, Esq., blocks of fossiliferous limestone from the farm caves near Maulmain.

4.—From the government of Bengal, a collection of Geological specimens collected in the vicinity of the Hurriogan Nuddee, by J. W. Masters, Esq., Sub-Assistant, Golaghat, and forwarded by Colonel Jenkins.

5.—From the Hon'ble Court of Directors through the Government of Bengal, a copy of the Catalogue of the birds in the India House Museum.

6.—From the Government of Bengal, maps of the districts of Beerbhoom, Maldah, and Twenty-four Pergunnahs for the Musuem of Economic Geology.

7.—From the Royal University of Christiania, Norway, the latest publications of the University.

8.—From Mr. W. Elliot, M. C. S., copies of Sanscrit MSS.

* Jábál, Brihajjábál, Rahasya, Kausiki, Chetta, Sárira, Amrítábindu. Bráhma, Gárbha and Ithihása. noted in the margin* obtained from the Library of the

Rájá of Tanjore.

Bábu Rájendralál Mittra observed that from a cursory inspection of these MSS. he believed them to be very rare and of considerable value.

The following gentlemen, duly proposed and seconded at the last meeting, were ballotted for and elected ordinary members.

Lieut. R. De Bourbel, Engineers.

Dr. Mouat, and

Lieut. Chancey, Madras Army.

Captain H. Yule, Engineers, was proposed for election by Lieut.-Col. W. E. Baker, seconded by Professor Oldham.

The Council submitted a report recommending that the Rev. J. Porter, of Damascus; Monsieur A. Von Kremer, of Alexandria; Dr. E. Smith, of Beyrout; J. Tailor, Esq., of Bussorah; M. M. H. and A. Schlagintweit, and Dr. Wilson, of Bombay, be elected corresponding members of the Society.

The election of Bábu Rájendralál Mittra as a member of the Council, reported at the last meeting, was confirmed under bye law 60.

Pursuant to notice given at the last meeting, Captain Thuillier moved "that a proposition be submitted to the Society at large, that the subscriptions of members of the Society be reduced from sixteen to ten Rs. per quarter."

Professor Oldham proposed the following amendment, "that it being the opinion of the present meeting, that the subscription of the members should be reduced, they request that the votes of the

non-Resident members may be collected on the proposition, and a special meeting summoned for its decision."

The amendment was put to the vote and lost.

A second amendment was proposed by Mr. Beaufort, "that the reduction be made experimentally for one year, and in regard to new members only, with a view to ascertain in what degree such reduction will attract members to the Society."

This amendment was also negatived.

The original motion, seconded by Lieutenant-Colonel Baker, was then put to the vote and carried.

Mr. R. Hamilton then moved, seconded by Mr. Atkinson, "that the second Wednesday in September be fixed for a special general meeting, for the purpose of finally deciding the question and be duly advertised accordingly."

Carried.

Communications were received—

1.—From Sir Proby T. Cautley, offering thanks for his election as an Honorary Member of the Society.

2.—From Bábu Rádá Náth Sikdár, forwarding copy of a Meteorological Register kept at the Surveyor General's Office, Calcutta, for the month of March last.

3.—From Mr. Assistant Secretary Oldfield, enclosing copy of a Meteorological Register kept at the office of the Secretary to the Government of the N. W. P., Agra, for the month of April last.

4.—From Lieut. R. Stewart, submitting a sketch of the Kooki Grammar and a Meteorological Register kept at Apaloo for the month of November last.

5.—From W. Grey, Esq., Secretary to the Government of Bengal, enclosing correspondence relating to the existence of iron ores in the Carribari Hills and at Dhubri in Assam.

The substance of this correspondence was contained in a letter read at the last meeting. The specimens forwarded to the Government were submitted to Dr. M. C. Macnamara for examination.

His report is as follows:—

"The iron is chiefly combined in the ore with sulphur, but some oxide of iron is also present. The quantities of metallic iron amount to only 17.3 per cent.

"The copper is also partly present as a sulphuret, partly as oxide? The proportion of metallic copper amounts to 70 per cent."

The Curator of the Museum of Economic Geology read a report.

The Librarian submitted his usual monthly report.

Mr. Oldham at the request of the President, described in detail the Geological structure of the Talcheer Coal field, in the tributary mehals of Cuttack, which had been examined during the past season by Messrs. Blanford and Theobald attached to the Geological Survey, illustrating his remarks by maps and sections of the field. The full details will shortly be published.

On the motion of the Chairman, the best thanks of the Society were voted to Mr. Oldham for his very interesting information.

Report of the Curator, Museum of Economic Geology.

Geological and Mineralogical.—We some time ago received from Captain Blagrave, a collection of rocks and minerals from the hills of Shahkol, Sanglee and Chemot (?) in Jhung, but I was, and have been since, prevented from taking them up by other researches then on hand. This I hope to do forthwith, but I mention them here that the donation may be on record, which it should have been earlier had I not proposed first to examine them before mentioning them and then passed them over for more urgent matters.

In the Rev. Mr. Hislop's collection from Nagpore, I have found a very fine specimen of the scarce mineral Condroidite, which is upon the table, as well as the museum specimen of it from New Jersey, U. S.

From Dr. Spilsbury we have received a specimen of Schorl in quartz from Choor Serai, North of Nagpore.

I have had to revise my second paper on the silt of the Hooghly announced at a former meeting, and in consequence of the farther views to which I have been led, to repeat several of the examinations, and to add some new ones, which has delayed it greatly: I now present it complete for the Journal.

Economic Geology.—We have received a series of copper ores from Dr. Campbell of Darjiling, who was in hopes that he had found blue copper (the azurite or blue carbonate of copper) amongst them, but this was merely a deceptive appearance, and the ores are the same unpromising sulphurets as before, in a very tough rock, and apparently not found in large masses. However this is but the surface indication, the produce of a shaft or gallery may be something widely differing.

I have been occupied for a considerable time since my last report with analyses of iron ores for Col. Drummond, of which the following are the tabulated results:—

	Water and Carbonic Acid.	Earthy matters.	Arsenic.	Carbonate lime.	Magnesia.	Iron peroxide.	Loss or excess.	Contains metallic iron.
No. 1. De-chourie, . . .	1.56	19.10	5.70	0.50	..	68.65	4.49*	47.60
No. 2. Dechourie, . . .	2.00	22.40	0.91	2.60	..	73.50*	1.41	50.96
No. 3. Loha Bhurbur, . .	2.50	20.00	7.91	1.90	..	75.05†	7.36†	52.00
W. . .	2.75	43.75	3.90	2.43	..	42.02	0.15	29.13
No. 4. Loha Bhurbur, C. A. .	5.00							
Native iron-slugs, . .		40.25	3.65	..	..	60.13‡	4.03‡	46.42
W. . .	5.40	44.40	..	12.00	..	27.60	6.15§	
No. 5. Turwagar, C.A. .	4.35							

* Excess from peroxidation.

† In No. 3 much specular iron and peroxidation of protoxide.

‡ Loss from water of combination with the earthy matters and ore.

§ Some excess from peroxidation.

We have received from Mr. Hodgson of Darjiling two bottles of water from the Minchu spring, near that station, and from A. Grote, Esq. C. S. some small bottles of mineral water from Sosoneah, North of Hazareebagh, and also a larger quantity of a mineral water from Kudjorah in Jessore. Of these three waters I have completed a preliminary examination which will form a paper for the Journal.

From Mr. Cowan of the Gas Light works, who called for some information about a yellow earth, of which a quantity was procured in the bazar, and which they find useful to mix with the English fire-clay for their retort furnaces, I have obtained a specimen of the Boghead Cannel coal of Linlithgowshire, which is a great acquisition to the coal collections. In sending it, that gentleman writes:—

“I have left you as promised a sample of the Boghead Cannel coal found in Linlithgowshire. I have now had a fair trial of the Bengal coal for gas-making and find it very good indeed.”

I have received from Major Ramsay a specimen of a supposed coal shale from the Nepal Terraie, close to the plains, at a place called Hetounda, where the mineral, it is said, abounds. It was discovered by a brother of H. H. Jung Bahadoor, and the minister was desirous of having an opinion upon it.

Though a surface specimen, and a good deal mixed with a promising kind of sandstone in layers and nests, it proves to be a very fine bituminous Lignite, giving on analysis—

Gaseous matter,	35.50
Carbon,	50.25
Ash (reddish),	14.25
	<hr/>
	100 00

which are nearly the average constituents of the common Burdwan coal, so that it is thus a very good fuel; and if good workable beds or veins of it are found, and water carriage is within reach, no doubt it may prove highly advantageous to the river steamers at Dinapore and higher up.

Babu Rammanath Bannerjee has handed to me a specimen of coal and four of sandstones. The coal is found very near to the surface, at Darjeeka, seven miles to the N. West of Ranneegunge. It is of an excellent quality being quite equal to the average of the good Ranneegunge and Chinakuri sorts.

Its specific gravity is,	1.32
Its contents in 100 parts are,	
Water,	2.90
Gaseous matter,	31.85
Carbon,	54.85
Ash,	10.40
	<hr/>
	100.00

Of the four sandstones three are quite worthless, but the fourth is a tough compact brown sandstone with a calcareous cement, splitting in layers thin enough to be used for roofing, like slates.

To Dr. Spilsbury we are indebted for the following valuable specimens:

Hematite iron ore with manganese from Ponhoga, near Jubbulpore.

Manganese ore from Ramtek Nagpore.

Quartz rock with gold from Australia.

Massive gold from Australia.

Gold in ferruginous clay from Frederick's valley near Summerhill, Australia.

Massive gold with matrix from California.

From Captain Saxton of the Cuttaek Survey we have received a specimen of the washed sand from the gold washings of the Bráhmínee and some of the gold sand. I do not find the washed sand to contain any thing worth notice, and the auriferous sand is in too small a quantity to afford a portion for analysis.

Dr. McGowan of Ningpo has sent us from that country, with some other specimens, which I shall advert to in a future report, a small bit of alum stone from the Sung-Yang hills bordering on Foh Kien, together with a newspaper extract describing some of the uses of alum in China, and the works from whence this his specimen is obtained. The extract is as follows:—

“*Alum.*—About eleven hundred tons of Alum have been exported within a short period, chiefly to India. This mineral is largely employed by the Chinese in dying, and to some extent in paper-making as with us. Surgeons apply it variously after depriving it of its water of crystalization, and in domestic life it is used for precipitating vegetable substances suspended in potable water. It is used also by the Chinese in a manner peculiar to themselves. Fishermen are usually provided with it, and when they take one of those huge *Rhizostoma* which abound on the coast they rub the animal with the pulverized styptic to give a degree of coherence to the gelatinous mass. Architects employ it as a cement in those airy bridges which span the water-courses. It is poured in a molten state into the interstices of stones, and in structures not exposed to constant moisture the cohesion is perfect, but in damp situations it becomes a hydrate and crumbles, a fact of which the whole empire was officially informed by the government about thirty years ago. It was discovered that water had percolated into the mausoleum of Kiaking, having been built too near to the mountain side, the alum cement imbibed moisture, segregated and opened the way for to enter the tomb. In those peaceful days such an event was of such importance as to call forth edicts and rescripts, memorials and reports in succession for several months. The son-in-law of the deceased monarch to whose care the construction of the edifice had been entrusted was fined and degraded, and a statesman from Fohkien acquainted with the properties of alum was appointed to remove it a short distance from the mountain.

“Alum was first introduced into China from the West, and until a comparatively recent period the best kind called sometimes Persian, and at others Roman Alum was brought from Western Asia. Numerous localities where an inferior article is manufactured are mentioned in the Pharmacopœa—*viz.*, Shan-tung, Shan-se, Kiang-su, Hukwang, Sz'-chuen, also in the South-western frontier and in Tibet. That from Sz'-chuen is represented as having the property of converting iron into copper or of coating iron with copper, by placing the former metal in a solution of rice-liquor and alum, the stone of that province. The most recent editions of works on materia medica contain no reference to the mines in this province, the products of which have surpassed in quality the foreign, and rendered

its importation unnecessary. From this and from other circumstances it is certain that the works which we shall now describe have not been long in operation. They are in the Sung-yang hills bordering on Foh-kien in the district of Ping-yang, Wan-chau prefecture, and in close proximity to Peh-kwan harbor ($27^{\circ} 9' 10''$ N., $120^{\circ} 32' 6''$ E.)

“The locality has been visited by one foreigner only, to whom we are indebted for most of the following particulars. About two months ago he started from Chih-k'i bight in Lannai harbor to which Ningpo boats resort for this commodity to the Northward of Peh-kwan. Three hours' hard walking over a succession of precipitous hills crossed by stone steps and pathways brought him to the mines. Ten Alum-making establishments were in operation, which, with the exception of one on a hill opposite, occupied about a mile of the side of a lofty hill. The works were adjacent to the quarries from which the Alum-stone seemed to crop out of decomposed rock of the same lithological character. The stones were thrown into a fire of brushwood where they burnt with a slight lambent flame and as they cracked, the fragments were raked out broken into small pieces, and macerated in vats. Subsequently the disintegrated mineral was thrown with water into a vessel having an iron bottom and sides of wood and boiled for a short time. The lixivium was then poured into large reservoirs where it crystallized into a solid mass. Blocks of alum weighing about fifty catties each were hewn out of the reservoir and carried in this state in bamboo frames, one on each end of a porter's pole to the place of shipment, where it is broken into fragments. When not designed for immediate exportation, the blocks are stored away for drying. On reaching the depôt the alum is found charged with a double quantity of moisture, the porters being obliged to deliver a certain weight, they slip their burdens in the mountain streams which they pass in the journey. Judging from the number of labourers engaged in transporting the mineral on the day of our informant's visit, the quantity brought from the works could not be less than eighteen tons. This was represented as less than an average day's work, as labour was in such demand just then for agricultural purposes that double pay was given;—and aged men, and women, with boys and girls were pressed into the service. Assuming that day's product as a basis for calculation and making an allowance for rainy days, we may safely estimate the annual supply as between five and six thousand tons. The quantity consumed by the dyers of Ningpo prefecture alone, being nearly twenty-two tons per annum, is corroborative of this estimate. The supply is literally inexhaustible. Five dollars-and-a-quarter a ton at the landing would afford the manu-

facturer a fair profit. It often fetches much more, as there has been an increasing demand for the article owing to the greater facilities afforded for exportation from Ningpo in foreign vessels.

"The Wan-chau Alum is equal to the best Roman,—a roseate tint in some specimens indicates the presence of minute quantities of iron.

"We have no means of ascertaining the precise geological position of the rock from which this alum is procured; some circumstances seem to indicate it to be a new mineral. It is stated that no potash nor any other material is employed in the works. Granitic and porphyritic rocks abound in the vicinity, and some parts of the district produce iron and silver. According to the Wan-chau Topography, the working of silver was discontinued in the reign of Wan-lih (1615) in consequence of imperial prohibition. This part of the coast has recently become the seat of extensive poppy cultivation for the bane of the Chinese race.

"As a contribution to the physical description of the alum district, we would add that the typhoon of September last was preceded by a rising of water in wells and ponds many miles inland. When the cyclone reached the coast it submerged about a hundred square miles, occasioning a vast destruction of life and property. The waters of the sea were retained in the country by strong Easterly winds for several days leaving a strip of land bordering on the sea quite dry."—*North China Herald*, 23rd January, 1856."

The rock, for it is one, and not a mineral, is a grey felspar porphyry with minute brilliant white specks, which may be arsenical pyrites, silvery mica or sulphuret of Nickel, but I was unable to sacrifice enough of the rock to ascertain what it was. When polished it shews a very pretty surface, and a small portion pulverised and calcined and then boiled gave sulphuric acid and alumina to the usual tests, so that it is probably an alum porphyry, i. e. a porphyry containing Alunite.

H. PIDDINGTON.

LIBRARY.

The Library has received the following accessions during the month of May last.

Presented.

Oeuvres Complètes De N. H. Abel, Mathématicien, Avec des Notes et Développemens, Rédigées par ordre du Roi par B. Holmboe, *Christiania*, 1839, 2 vols. bound in one, 4to.—BY THE ROYAL UNIVERSITY OF CHRISTIANIA, NORWAY.

Recherches Cliniques sur La Syphilisation, par Dr. Wilhelm Böeck, pamphlet.—BY THE SAME.

Christian Den Fjerdens Norske Lovbog af. 1604, Efter Foranstaltning af.

det Akademiske Kollegium ved det Kongelige Norske Frederiks Universitet af. Fr. Hallager og Fr. Brandt. 1855, 8vo.—BY THE SAME.

Universitatis Regiæ Fredericiæ, Novæ Ædes.—BY THE SAME.

Beretning om Bodsængflets Perklomhed.—BY THE SAME.

Om Dodeligheden i Rorge Bidrag til Kundskab om Folkets Karr af. Gilbert Sundt, Christiania, 1855, 12mo.—BY THE SAME.

Midlertidigt Reglement for Gaustad Sindssyge Asyl. 1855, 8vo.—BY THE SAME.

Det Kongelige Rørste Frederits Universitets, Aarsberetning for 1853, pamphlet.—BY THE SAME.

Das Christiania-Silurbecken, Chemisch-geognostisch. untersucht, von. Theodor Kjerulf, 1855, qto. pamphlet.—BY THE SAME.

De prisca re monetaria Norvegiæ et de Numis Aliquot et ornamentis, in Norvegia Repertis, by C. A. Holmboe, *Christiana*, 1854, 8vo. pamphlet.—BY THE SAME.

Nyt Magazin for Naturvidenskaberne, udgives af. den physiographiske Forening i Christiania ved Chr. Langberg, 1854. vol. VIII. Parts 3 and 4, 8vo.—BY THE SAME.

Recueil d' Observations sur les Maladies de la Peau par W. Böeck et D. C. Danielssen, *Christiana*, 1855.—BY THE SAME.

Catalogue of the Birds in the Museum of the East India Company, Vol. I. 8vo.—BY THE HON'BLE COURT OF DIRECTORS.

Appendix to the Report on the Government Central Museum of Madras.—BY THE GOVERNMENT OF BENGAL.

Report of the Director of the Public Instruction on the Lower Provinces for 2nd and 3rd quarter of 1855-56, i. e. from Nov. 1855 to 31st Jan. 1856, 2 copies, pamphlets.—BY GORDON YOUNG, ESQ. DIRECTOR OF PUBLIC INSTRUCTION.

The Qorän ; with the Commentary of the Imam Aboo Al-qasim Maḥmood Bin 'Omar Al-zamakhshari, entitled " The Kashshaf'an Haqaiq Al-tanzil," 4to. Calcutta, 1856.—BY LIEUT. W. N. LEES.

Selections from the Records of the Government of India, No. XI.—BY THE GOVERNMENT OF INDIA.

Bydhorbo Dhurmoodhoy, pamphlet, 8vo.—BY BABU RA'MA'NA'TH GOS-SAIN.

The Oriental Baptist for May, 1856.—BY THE EDITOR.

The Calcutta Christian Observer for May, 1856.—BY THE EDITORS.

Upadeshak for May, 1856,—BY THE EDITOR.

The Indian Annals of Medical Science, No. VI. April, 1856. 8vo.

Exchanged.

The Calcutta Review, No. LI. for March, 1856.

June 1st, 1856.

GOUR DOSS BYSA'CK, Asst. Secy. and Librn.

FOR JULY, 1856.

At a monthly general Meeting of the Society held on the 2d instant, at the usual hour.

Dr. G. G. Spilsbury, Vice-President in the Chair.

The proceedings of the last meeting were read and confirmed.

Presentations were received—

From Colonel G. B. Tremenheere through Messrs. Allen, Deffell and Co., a box of minerals and specimens illustrating the different stages of metallurgical processes, particularly of the manufacture of Iron, for the department of Economic Geology.

2.—From Mr. H. Piddington, a silver coin obtained from Mr. Downward at Sreecond.

Bábu Rájendraál Mittra stated the coin was a good specimen of a well known type. It belonged to the reign of Jeenu, who obtained the sovereignty of Bengal in the year of Hejira 795, and died in 812. It bore no date, but the title of the king—Mahammad Shah, which he assumed on his conversion to Islam—was perfectly distinct. The weight of the coin was 163 grains, and its diameter 12-10ths. The barred lines both on the obverse and the reverse were alike, and included the Mahammedan creed "*La Ilaha illil la, &c.*"

3.—From the Bavarian Academy of sciences, the latest publications of the Academy.

4.—From Dr. Cheek of Benares through Mr. Blyth, a Santhal sword, battle-axe, and bow and arrows.

5.—From Mr. C. Hollings, Gya, through Mr. Grote, the skeleton of a Dingo—the so-called wild dog of Australia.

6.—From Mr. Grote, C. S. the superb Meteorite from Soogoulee which was exhibited at the meeting in February last by that gentleman.

Captain H. Yule, Engrs., proposed and seconded at the last meeting was balloted for and elected a member.

On the recommendation of the Council the following gentlemen proposed at the last meeting were balloted for and elected corresponding members of the Society:—Rev. J. Porter of Damascus, Mons. A. Von Kremer, of Alexandria, Dr. E. Smith of Beyrout,

Mons. H. Schlagintweit, Mons. A. Schlagintweit, Dr. Wilson of Bombay and J. Taylor, Esq., of Bussorah.

The following gentlemen were named for ballot at the next meeting :—

A. Roberts, Esq., C. S. and

Major W. C. Erskine, proposed by Mr. J. G. Meddlecott and seconded by Mr. T. Oldham.

Raja Suttoshurn Ghosal Bahadoor, proposed by Bábu Rámgopaul Ghose and seconded by Dr. Spilsbury.

Communications were received—

1.—From the Governor General in Council, through G. F. Edmonstone, Esq., Secretary to the Government of India, a narrative of the Travels in Central Asia of Syud Khwajah Ahmud who was despatched by the late Colonel Mackeson in October, 1852, in search of Lieutenant Wyburd.

Dr. Thompson read portions of the narrative, and remarked that this paper having been made over to him for report, he had much pleasure in directing attention to the many points of interest which it presented. The traveller had passed through those unknown districts of Central Asia to which the eyes of Geographers are turned with great interest, but from which Europeans are excluded by the jealous policy of the Chinese. Leaving Le in the winter of 1852-3 he proceeded to Yarkund, sent one of his party to Khoten and Aksoo, and proceeded himself to Kashgur and thence to Kokan, Samarkund and Bokhara, from which place he returned viâ Cabul to Peshawur without having obtained other than negative information regarding the object of his mission.

He gives many interesting details regarding Khoten, Aksoo, Yarkund and Kashgur, the general aspect of the country and the population and the nature of the authority exercised by the Chinese.

Dr. Thompson further remarked that the publication of the present report would doubtless direct the attention of Geographers to this interesting journey, so as to obtain from the traveller information regarding many points of great geographical interest which are not alluded to in it, but with which he must be well acquainted.

2.—From Bábu Rádhá Náth Sikdár, forwarding copy of a Meteor-

ological register kept at the Surveyor General's Office, Calcutta, for the month of April last.

3.—From Mr. E. A. Samuells B. C. S. notes on a Forest race, called Pattooa or Juanger, inhabiting certain of the tributary Mehals of Cuttack.

The Librarian submitted his usual monthly report.

LIBRARY.

The Library has received the following additions during the month of June.

Presented.

Abhandlungen der Mathemath-Physikalischen Classe der koeniglich Bayerischen Akademie der Wissenschaften, *München*, 1851, 4to. 6th vol. 2nd and 3rd parts, and 7th vol. part I.—BY THE ACADEMY.

—— der Philosoph-Philologischen Classe der königlich Bayerischen Akademie der Wissenschaften, *München*, 1853, 4to. 6th vol. parts 3rd and 7th vol. part I.—BY THE SAME.

—— der Historischen Classe der ditto ditto, 1852, 4to. 6th vol. part 3rd.—BY THE SAME.

Architektonische Zeichnungen als Beilage zu den zwei Abhandlungen über das Erechtneum in B. V. 3 u. VI. I. der Abh. der I Classe d. k. b. Ak. d. Wiss. von E. Mezger, 4to.—BY THE SAME.

Gelehrte Anzeigen, *München*, vols. 33, 34 and 35, July to December, 1851, and Jany. to Decr. 1852.—BY THE SAME.

Afrika vor den Entdeckungen der Portugiesen von F. Kunstmann, *München*, 1853.—BY THE SAME.

Bulletin of the Royal Academy of Sciences, *München*, Nos. 34 to 43 for 1851—Nos. 1 to 29 for 1852 and Nos. 1 to 25 for 1853.—BY THE SAME.

Zeitschrift der Deutschen morgenländischen Gesellschaft, zehnter Band I. und II. heft, 8vo. Leipzig, 1856.

Ueber den Chemismus der Vegetation, von Dr. A. Vogel, Jr. *München*, 1852, pamphlet, 4to.—BY THE SAME.

Verzeichniss von Abhandlungen und Selbständigen Schriften aus dem Gebiete der Sprachforschung, erschienen in Ferd. D. Verlagsbuchhandlung, Jany. 1856.—BY THE SAME.

Die Gegenwartige Aufgabe der Philosophie, Von Dr. Prantl, 1852, pamphlet.—BY THE SAME.

Natuurkundig Tijdschrift voor Nederlandsch Indie, Deel X. Svo. Batavia.—BY THE EDITORS.

Reports of the Juries of the Madras Exhibition, 1855, pamphlet.—BY THE GOVERNMENT OF BENGAL.

General Report on Public Instruction in the Lower Provinces of the Bengal Presidency from 27th January to 3rd April, 1855.—BY THE SAME.

Report of the Administration of the Salt Department of the Revenue of Bengal, for the year 1854-55.—BY THE SAME.

Selections from the Records of Government, N. W. P. Part XXV. 1856.—BY THE AGRA GOVERNMENT.

Half-yearly Report of the Committee of the Bengal Chamber of Commerce, 1st May, 1856.—BY THE CHAMBER OF COMMERCE.

The Oriental Christian Spectator for May, 1856.—BY THE EDITOR.

The Oriental Baptist for June, 1856.—BY THE EDITOR.

The Calcutta Christian Observer for June, 1856.—BY THE EDITORS.

Upadeshak for June, 1856.—BY THE EDITORS.

Tuttwabodhini Pátrica.—BY THE TUTTWABODHINI SOBHA'.

The Citizen Newspaper.—BY THE EDITOR.

The Durbin ditto.—BY THE SAME.

Exchanged.

The Calcutta Review, No. LII. for June, 1856.

The Athenæum for March, 1855.

The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science, No. 72, for April, 1856.

The Journal of Indian Archipelago and Eastern Asia, from April to September, 1855, Vol. IX. Nos. 4 to 9, 2 copies.

Purchased.

The American Journal of Science and Arts, No. 62, March, 1856.

Comptes Rendus, Nos. 10 and 11, for 10th and 17th March, 1856.

The Westminster Review, No. XVIII. April, 1856.

Revue des Deux Mondes, 1st April, 1856.

Annales des Sciences Naturelles, No. 3, Tome IV.

Journal des Savants, for March, 1856.

Revue et Magasin de Zoologie, No. 2, of 1856.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of January, 1856.*

Latitude 22° 33' 1" North. Longitude 88° 20' 34" East.

Height of the Cistern of the Standard Barometer above the level of the Sea, ^{Feet} 18.11

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

Date.	Mean Height of the Barometer at 32° Fahr.	Range of the Barometer during the day.			Mean Dry Bulb Thermometer.	Range of the Tempera- ture during the day.		
		Max.	Min.	Diff.		Max.	Min.	Diff.
	Inches.	Inches.	Inches.	Inches.	o	o	o	o
1	New year's day.							
2	30.038	30.129	29.973	0.156	64.1	75.6	55.6	20.0
3	.048	.133	30.003	.130	63.7	74.4	55.0	19.4
4	.062	.154	.011	.143	64.9	77.0	55.2	21.8
5	.007	.087	29.940	.147	67.3	78.0	60.5	17.5
6	Sunday.							
7	.051	.125	30.012	.113	70.7	80.0	64.0	16.0
8	.106	.189	.041	.148	66.8	75.5	59.6	15.9
9	.151	.239	.109	.130	64.4	74.4	55.6	18.8
10	.154	.243	.080	.163	65.5	75.8	57.4	18.4
11	.119	.204	.070	.134	66.2	74.4	58.6	15.8
12	.074	.161	.020	.141	66.7	76.2	60.4	15.8
13	Sunday.							
14	.060	.149	.001	.148	70.5	80.6	62.6	18.0
15	.058	.141	29.994	.147	70.8	81.9	61.0	20.9
16	.092	.166	30.033	.133	71.2	79.8	66.0	13.8
17	.085	.167	.012	.155	69.1	77.8	62.4	15.4
18	.083	.172	.020	.152	67.8	78.3	58.2	20.1
19	.084	.148	.017	.131	69.5	79.5	60.6	18.9
20	Sunday.							
21	.103	.194	.042	.152	70.8	80.2	63.9	16.3
22	29.999	.071	29.921	.150	71.5	82.1	63.2	18.9
23	.984	.083	.934	.149	71.7	81.0	66.8	14.2
24	.995	.071	.952	.119	69.0	79.0	61.1	17.9
25	30.031	.121	.978	.143	70.5	81.2	62.6	18.6
26	29.954	.044	.877	.167	71.8	82.2	62.2	20.0
27	Sunday.							
28	.988	.075	.919	.156	74.1	82.0	68.0	14.0
29	30.035	.126	.965	.161	70.8	79.2	64.8	14.4
30	29.992	.077	.893	.179	68.8	80.3	63.2	17.1
31	.918	29.981	.867	.114	66.1	71.7	62.8	8.9

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of January, 1856.*

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon. (Continued.)

Date.	Mean Wet Bulb Ther- mometer.	Dry Bulb above Wet.	Computed Dew Point.	Dry Bulb above Dew Point.	Mean Elastic force of Vapour.	Mean Weight of Va- pour in a Cubic foot of Air.	Additional weight of vapour required for complete saturation.	Mean degree of Hu- midity complete sa- turation being unity.
	o	o	o	o	Inches.	T. gr.	T. gr.	
1	New year's day.							
2	58.2	5.9	54.1	10.0	.429	4.78	1.89	0.72
3	57.8	5.9	53.7	10.0	.423	.72	.87	.72
4	58.8	6.1	55.1	9.8	.444	.94	.91	.72
5	62.5	4.8	59.6	7.7	.516	5.71	.66	.78
6	Sunday.							
7	65.0	5.7	62.1	8.6	.561	6.16	2.02	.75
8	59.4	7.4	55.0	11.8	.442	4.90	.36	.68
9	57.0	7.4	51.8	12.6	.397	.41	.33	.65
10	59.8	5.7	56.4	9.1	.464	5.15	1.83	.74
11	61.3	4.9	58.4	7.8	.496	.49	.63	.77
12	61.1	5.6	57.7	9.0	.485	.36	.87	.74
13	Sunday.							
14	64.6	5.9	61.6	8.9	.552	6.06	2.07	.75
15	65.0	5.8	62.1	8.7	.561	.16	.04	.75
16	68.2	3.0	66.7	4.5	.653	7.16	1.14	.86
17	61.9	7.2	58.3	10.8	.494	5.44	2.34	.70
18	60.8	7.0	56.6	11.2	.467	.16	.32	.69
19	64.2	5.3	61.5	8.0	.550	6.06	1.82	.77
20	Sunday.							
21	66.6	4.2	64.5	6.3	.607	.68	.52	.82
22	65.8	5.7	62.9	8.6	.576	.31	2.07	.75
23	66.0	5.7	63.1	8.6	.580	.35	.08	.75
24	61.7	7.3	58.0	11.0	.489	5.39	.37	.70
25	64.1	6.4	60.9	9.6	.539	.92	.21	.73
26	66.0	5.8	63.1	8.7	.580	6.35	.10	.75
27	Sunday.							
28	63.8	5.3	66.1	8.0	.640	.99	.03	.77
29	65.5	5.3	62.8	8.0	.574	.31	1.89	.77
30	65.0	3.8	63.1	5.7	.580	.39	.32	.83
31	63.9	2.2	62.6	3.5	.570	.32	0.78	.89

*Abstract of the Results of the Hourly Metcorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of January, 1856.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon. (Continued.)

Hour.	Mean Height of the Barometer at 32° Fahr.	Range of the Barometer for each hour during the month.			Mean Dry Bulb Thermometer.	Range of the Temperature for each hour during the month.		
		Max.	Min.	Diff.		Max.	Min.	Diff.
	Inches.	Inches.	Inches.	Inches.	°	°	°	°
Mid-night.	30.053	30.179	29.944	0.235	65.2	74.0	59.2	14.8
1	.048	.169	.962	.207	64.6	73.6	58.4	15.2
2	.038	.164	.910	.254	63.9	73.4	57.4	16.0
3	.030	.154	.924	.230	63.2	72.4	57.0	15.4
4	.024	.150	.868	.282	62.9	71.8	56.2	15.6
5	.024	.121	.870	.251	62.5	71.6	55.5	16.1
6	.044	.173	.925	.248	61.9	69.9	55.0	14.9
7	.073	.204	.911	.293	61.5	70.2	55.0	15.2
8	.105	.223	.939	.284	63.2	70.5	57.0	13.5
9	.129	.243	.964	.279	66.9	71.0	61.3	9.7
10	.128	.235	.981	.254	69.7	73.9	64.6	9.3
11	.107	.205	.972	.233	72.3	77.6	66.3	11.3
Noon.	.075	.174	.947	.227	75.0	79.6	68.0	11.6
1	.040	.148	.909	.239	76.8	81.0	69.2	11.8
2	.014	.129	.883	.246	77.9	82.0	71.6	10.4
3	.000	.117	.871	.246	78.2	82.2	71.7	10.5
4	29.994	.109	.867	.242	76.6	81.0	70.9	10.1
5	.999	.115	.877	.238	74.5	78.6	69.2	9.4
6	30.008	.111	.891	.220	71.8	75.6	67.2	8.4
7	.025	.123	.897	.226	69.9	74.0	65.0	9.0
8	.043	.138	.918	.220	68.5	72.7	63.5	9.2
9	.055	.152	.924	.228	67.3	72.0	62.2	9.8
10	.056	.160	.933	.227	66.2	71.6	61.2	10.4
11	.051	.175	.927	.248	65.5	71.4	59.0	12.4

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of January, 1856.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon. (Continued.)

Hour.	Mean Wet Bulb Thermo- meter.	Dry Bulb above Wet.	Computed Dew Point.	Dry Bulb above Dew Point.	Mean Elastic force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Additional weight of va- pour required for com- plete saturation.	Mean degree of Humidity, complete saturation be- ing unity.
	o	o	o	o	Inches.	T. gr.	T. gr.	
Mid- night.	62.3	2.9	60.6	4.6	0.534	5.92	0.99	0.86
1	61.8	2.8	60.1	4.5	.525	.83	.95	.86
2	61.3	2.6	59.5	4.4	.515	.73	.90	.86
3	60.7	2.5	58.9	4.3	.504	.62	.87	.87
4	60.4	2.5	58.6	4.3	.499	.58	.85	.87
5	60.3	2.2	58.8	3.7	.503	.60	.75	.88
6	59.7	2.2	58.2	3.7	.493	.51	.72	.88
7	59.3	2.2	57.8	3.7	.486	.44	.72	.88
8	60.6	2.6	58.8	4.4	.503	.60	.89	.86
9	62.4	4.5	59.7	7.2	.518	.74	1.54	.79
10	63.9	5.8	61.0	8.7	.541	.95	.98	.75
11	64.8	7.5	61.0	11.3	.541	.93	2.65	.69
Noon.	65.6	9.4	60.9	14.1	.539	.87	3.44	.63
1	65.7	11.1	60.1	16.7	.525	.69	4.14	.58
2	66.0	11.9	60.0	17.9	.523	.66	.50	.56
3	65.9	12.3	59.7	18.5	.518	.60	.65	.55
4	65.2	11.4	59.5	17.1	.515	.58	.19	.57
5	65.3	9.2	60.7	13.8	.536	.83	3.35	.64
6	65.2	6.6	61.9	9.9	.557	6.11	2.34	.72
7	64.5	5.4	61.8	8.1	.555	.11	1.87	.77
8	63.8	4.7	61.4	7.1	.548	.05	.60	.79
9	63.2	4.1	60.7	6.6	.536	5.92	.45	.80
10	62.5	3.7	60.3	5.9	.528	.86	.26	.82
11	62.2	3.3	60.2	5.3	.527	.85	.13	.84

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of January, 1856.*

Solar radiation, Weather, &c.

Date.	Max. Solar radiation.	Rain.	Prevailing direction of the Wind.	General Aspect of the Sky.
	o	Inches.		
1	New year's day.			[P. M.
2	133.5	..	W. or W. N. W.	Cloudless also foggy between 8 & 11
3	133.0	..	W. or N. W.	Cloudless. [P. M.
4	133.0	..	N. or W.	Cloudless, also slightly foggy at 8 & 9
5	132.8	..	Calm or W. or N. W.	Cloudless, also foggy before sunrise and [during the night.
6	Sunday.			
7	131.4	..	S. or S. W.	Scattered thin clouds till 7 A. M. cloud-
8	131.0	..	S. W. or W.	Cloudless. [less afterwards.
9	129.0	..	W. or S. W.	Cloudless, also slightly foggy during the night.
10	131.0	..	W. or S. W.	Cloudless till 9 A. M. scattered \i till 4 P. M. cloudless afterwards.
11	114.8	..	S. W. or W.	Cloudless till 6 A. M. principally scattered \i till 6 P. M. cloudless afterwards.
12	131.0	..	W. or S. W.	Cloudless till 11 A. M. scattered \i till 7 P. M. cloudless afterwards, and also [slightly foggy.
13	Sunday.			
14	136.0	..	S. W.	Cloudless till 7 A. M. and foggy towards the morning, scattered \i & \i till 7 P. M. cloudless & foggy afterwards.
15	138.0	..	S. W. or S.	Cloudless the whole day, also slightly foggy from midnight till sunrise.
16	135.0	..	S. or S. W.	Cloudless till 7 A. M. cloudy till Noon,
17	135.7	..	S. W. or W.	Cloudless. [cloudless afterwards.
18	135.0	..	S. W.	Ditto.
19	130.9	..	W. or S. or S. W.	Cloudless till 10 A. M. scattered \i till [7 P. M. cloudless afterwards.
20	Sunday.			
21	130.8	..	S. W. or W.	Cloudless till 10 A. M. scattered \i till 3 P. M. cloudless afterwards.
22	138.8	..	W. or S. W.	Cloudless.
23	134.0	..	S. W. or W.	Ditto.
24	133.0	..	W. or S. W.	Scattered \i till 8 A. M. scattered \i till 5 P. M. cloudless afterwards.
25	137.0	..	S. W.	Cloudless till 6 A. M. scattered \i or \i
26	132.8	..	S. W. or S.	Various clouds. [afterwards.
27	Sunday.			[drizzling at 6 A. M.
28	135.0	..	S. or S. S. E.	Cloudy the whole day, also thundering &
29	133.0	..	S. W. or variable.	Various clouds. [sunset.
30	135.0	..	N. E. or variable.	Cloudy, also thundering & raining after
31	125.0	1.06	N. or N. W.	Cloudy, also thundering & raining before sunrise.

\i Cirri, \i cirro strati, \i cumuli, \i cumulo strati, \i nimbi, —i strati, \i i cirro cumuli.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of January, 1856.*

MONTHLY RESULTS.

			Inches.
Mean height of the Barometer for the month,	..	....	30.049
Max. height of the Barometer occurred at 9 A. M. on the 10th,	..	....	30.243
Min. height of the Barometer, occurred at 4 P. M. on the 31st,	..	....	29.867
Extreme Range of the Barometer, during the month,	..	....	0.376

			°
Mean Dry Bulb Thermometer for the month,	..	....	68.6
Max. Temperature occurred at 3 P. M. on the 26th,	..	....	82.2
Min. Temperature, occurred at 6 A. M. on the 3rd,	..	....	55.0
Extreme Range of the Temperature, during the month,	..	....	27.2

Mean Wet Bulb Thermometer for the month,	..	....	63.1
Mean Dry Bulb Thermometer above Mean Wet Bulb Thermometer,	..	....	5.5
Computed Mean Dew Point for the month,	..	....	60.3
Mean Dry Bulb Thermometer above computed Mean Dew Point for the month,	..	....	8.3

			Inches.
Mean elastic force of vapour for the month,	..	....	0.528

			Troy grains.
Mean weight of vapour for the month,	..	....	5.84
Additional weight of vapour required for complete saturation.	..	....	1.83
Mean degree of Humidity for the month complete saturation being unity,	..	....	0.76

			Inches.
Rained 2 days. Max. fall of Rain during 24 hours,	..	....	1.06
Total amount of rain during the month,	..	....	1.06

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of February, 1856.*

Latitude 22° 33' 1" North, Longitude 88° 20' 34" East.

Height of the cistern of the Standard Barometer above the Level of the Sea 18.11. feet.

Daily Means, &c. of the Observations, and of the Hygrometrical elements
dependent thereon.

Date.	Mean Height of the Barometer at 32° Fahr.	Range of the Barometer during the day.			Mean Dry Bulb Thermometer.	Range of the Tempera- ture during the day.		
		Max.	Min.	Diff.		Max.	Min.	Diff.
	Inches.	Inches.	Inches.	Inches.	°	°	°	°
1	29.961	30.048	29.887	0.161	68.2	76.7	62.2	14.5
2	30.034	.117	.975	.142	68.6	76.4	62.4	14.0
3	<i>Sunday.</i>							
4	29.980	.057	.923	.134	70.1	75.4	67.0	8.4
5	30.000	.086	.952	.134	70.5	78.0	65.2	12.8
6	.033	.120	.985	.135	68.4	78.0	60.6	17.4
7	.017	.096	.962	.134	67.3	77.6	58.4	19.2
8	29.994	.095	.935	.160	67.2	79.0	56.8	22.2
9	.949	.006	.894	.112	68.7	78.8	59.3	19.5
10	<i>Sunday.</i>							
11	.934	.019	.865	.154	72.0	81.4	65.0	16.4
12	.879	29.958	.794	.161	71.8	83.3	64.0	19.3
13	.884	.943	.838	.105	73.8	84.8	64.8	20.0
14	.908	.994	.856	.138	75.6	86.2	66.6	19.6
15	.933	30.011	.883	.128	74.3	82.6	67.9	14.7
16	30.013	.100	.957	.143	70.9	82.1	61.0	21.1
17	<i>Sunday.</i>							
18	29.999	.073	.943	.130	74.6	82.8	68.8	14.0
19	30.054	.143	30.003	.140	71.2	82.0	61.0	21.0
20	.032	.121	29.965	.156	71.0	82.2	60.2	22.0
21	.016	.104	.948	.156	71.6	83.6	61.6	22.0
22	29.976	.047	.903	.144	72.6	84.6	62.4	22.2
23	.962	.034	.896	.138	74.3	85.6	64.2	21.4
24	<i>Sunday.</i>							
25	.944	.031	.884	.147	77.6	88.8	69.8	19.0
26	.885	29.979	.792	.187	78.1	89.2	69.8	19.4
27	.823	.904	.762	.142	80.2	91.8	71.0	20.8
28	.893	.967	.811	.156	80.4	89.4	72.6	16.8
29	.981	30.074	.923	.151	79.5	86.8	76.0	10.8

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of February, 1856.*

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon. (Continued.)

Date.	Mean Wet Bulb Thermo- meter.	Dry Bulb above Wet.	Computed Dew Point.	Dry Bulb above Dew Point.	Mean Elastic force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Additional Weight of Va- pour required for com- plete saturation.	Mean degree of Humidity complete saturation be- ing unity.
	o	o	o	o	Inches.	T. gr	T. gr.	
1	64.3	3.9	62.0	6.2	0.559	6.18	1.40	0.82
2	63.7	4.9	61.2	7.4	.544	.01	.66	.78
3	<i>Sunday.</i>							
4	66.4	3.7	64.5	5.6	.607	.68	.35	.83
5	65.0	5.5	62.2	8.3	.563	.19	.94	.76
6	61.5	6.9	57.4	11.0	.480	5.29	2.33	.69
7	59.5	7.8	54.8	12.5	.440	4.85	.52	.66
8	59.8	7.4	55.4	11.8	.449	.96	.39	.68
9	61.9	6.8	58.5	10.2	.498	5.49	.20	.71
10	<i>Sunday.</i>							
11	64.1	7.9	60.1	11.9	.525	.75	.75	.68
12	64.5	7.3	60.8	11.0	.537	.89	.56	.70
13	66.1	7.7	62.2	11.6	.563	6.14	.84	.68
14	71.0	4.6	68.7	6.9	.697	7.58	1.90	.80
15	64.7	9.6	59.9	14.4	.521	5.69	3.43	.62
16	61.4	9.5	56.6	14.3	.467	.13	.10	.62
17	<i>Sunday.</i>							
18	65.7	8.9	61.2	13.4	.544	.94	.26	.65
19	61.2	10.0	56.2	15.0	.461	.05	.25	.61
20	62.3	8.7	57.9	13.1	.488	.35	2.90	.65
21	62.8	8.8	58.4	13.2	.496	.43	.97	.65
22	63.6	9.0	59.1	13.5	.508	.55	3.11	.64
23	65.6	8.7	61.2	13.1	.544	.94	.18	.65
24	<i>Sunday.</i>							
25	70.7	6.9	67.2	10.4	.664	7.20	2.87	.72
26	72.6	5.5	69.8	8.3	.722	.82	.40	.77
27	72.1	8.1	68.0	12.2	.681	.35	3.58	.68
28	72.5	7.9	68.5	11.9	.692	.47	.47	.68
29	74.9	4.6	72.6	6.9	.790	8.54	2.12	.80

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of February, 1856.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon. (Continued.)

Hour.	Mean Height of the Barometer at 32° Fahrt.	Range of the Barometer for each hour during the month.			Mean Dry Bulb Thermometer.	Range of the Temperature for each hour during the month.		
		Max.	Min.	Diff.		Max.	Min.	Diff.
	Inches.	Inches.	Inches.	Inches.	°	°	°	°
Mid-night.	29.962	30.042	29.832	0.210	68.4	77.0	62.3	14.7
1	.956	.031	.819	.212	67.7	76.8	60.6	16.2
2	.943	.022	.808	.214	67.2	77.0	59.6	17.4
3	.934	.017	.792	.225	66.6	76.5	58.9	17.6
4	.925	.012	.788	.224	66.2	76.0	58.0	18.0
5	.941	.036	.799	.237	65.2	76.2	57.6	18.6
6	.961	.048	.816	.232	65.1	76.4	56.8	19.6
7	.984	.087	.848	.239	64.9	76.2	57.2	19.0
8	30.010	.110	.879	.231	67.4	77.0	61.2	15.8
9	.036	.138	.893	.245	71.5	79.1	67.2	11.9
10	.045	.143	.904	.239	74.2	81.8	69.0	12.8
11	.033	.133	.894	.239	77.0	84.2	70.6	13.6
Noon.	.006	.103	.863	.240	79.5	87.8	72.4	15.4
1	29.972	.069	.824	.245	81.2	90.0	74.2	15.8
2	.941	.033	.797	.236	82.1	91.4	74.8	16.6
3	.920	.013	.776	.237	82.6	91.8	74.9	16.9
4	.910	.003	.762	.241	81.9	91.4	73.9	17.5
5	.911	.004	.768	.236	80.5	87.6	73.2	14.4
6	.918	.011	.773	.238	77.2	85.5	70.9	14.6
7	.931	.026	.783	.243	74.6	83.4	69.1	14.3
8	.955	.047	.820	.227	72.7	81.0	67.0	14.0
9	.970	.059	.830	.229	71.4	80.0	65.4	14.6
10	.978	.068	.840	.228	70.1	78.4	64.0	14.4
11	.974	.066	.837	.229	69.4	77.6	63.0	14.6

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Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

Hour.	Mean Wet Bulb Thermo- meter.	Dry Bulb above Wet.	Computed Dew Point.	Dry Bulb above Dew Point.	Mean Elastic force of Vapour.	Mean Weight of Vapour in a Cubic foot of Air.	Additional Weight of Va- pour required for com- plete saturation.	Mean degree of Humidity, complete saturation be- ing unity.
	o	o	o	o	Inches.	T. gr.	T. gr.	
Mid- night.	{ 64.9	3.5	62.8	5.6	0.574	6.33	1.29	0.83
1	64.6	3.1	62.7	5.0	.572	.33	.13	.85
2	64.3	2.9	62.6	4.6	.570	.31	.04	.86
3	63.8	2.8	62.1	4.5	.561	.21	.00	.86
4	63.5	2.7	61.9	4.3	.557	.18	0.94	.87
5	62.7	2.5	61.2	4.0	.544	.05	.86	.88
6	62.6	2.5	61.1	4.0	.543	.03	.86	.88
7	62.3	2.6	60.7	4.2	.536	5.95	.90	.87
8	63.6	3.8	61.3	6.1	.546	6.05	1.34	.82
9	65.2	6.3	62.0	9.5	.559	.13	2.25	.73
10	65.4	8.8	61.0	13.2	.541	5.90	3.19	.65
11	66.2	10.8	60.8	16.2	.537	.83	4.06	.59
Noon.	66.8	12.7	60.4	19.1	.530	.72	.94	.54
1	67.2	14.0	60.2	21.0	.527	.66	5.55	.51
2	67.7	14.4	60.5	21.6	.532	.71	.80	.50
3	67.9	14.7	60.5	22.1	.532	.71	.97	.49
4	67.6	14.3	60.4	21.5	.530	.69	.75	.50
5	67.7	12.8	61.3	19.2	.546	.89	.09	.54
6	67.8	9.4	63.1	14.1	.580	6.29	3.66	.63
7	67.1	7.5	63.3	11.3	.584	.37	2.83	.69
8	66.7	6.0	63.7	9.0	.591	.47	.21	.75
9	66.2	5.2	63.6	7.8	.590	.46	1.89	.77
10	65.6	4.5	63.3	6.8	.584	.42	.61	.80
11	65.2	4.2	63.1	6.3	.580	.39	.47	.81

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of February, 1856.*

Solar radiation, Weather, &c.

Date.	Max. Solar radiation.	Rain.	Prevailing direction of the Wind.	General Aspect of the Sky.
	o	Inches.		
1	132.0	..	N. W.	Cloudless till 11 A. M. scattered ☉ till 6 P. M. cloudless afterwards.
2	133.0	..	N. W.	Cloudless.
3	Sunday.			
4	..	..	E. or N. W.	Cloudy and drizzling till sunrise, also continues cloudy till 4 P. M. cloudless afterwards.
5	124.0	..	N. W. or N.	Various clouds till Noon, scattered ☾ till 6 P. M. cloudless afterwards.
6	135.2	..	N. or W.	Cloudless.
7	136.0	..	W. or N. W.	Cloudless.
8	139.0	..	N. W. or N.	Cloudless.
9	135.0	..	Calm or W. or N. W.	Cloudless.
10	Sunday.			
11	140.2	..	W.	Cloudless.
12	138.0	..	W.	Cloudless.
13	138.0	..	W.	Cloudless.
14	141.2	..	W. or S. W. or S.	Cloudless till 4 A. M. cloudy till 10 A. M.
15	140.0	..	S. or S. W.	Cloudless. [cloudless afterwards.
16	140.0	..	S. W. or W.	Cloudless.
17	Sunday.			
18	134.0	..	W. or N. W.	Cloudless.
19	136.3	..	N. or W. N. W.	Cloudless.
20	135.0	..	W. or N. W.	Cloudless.
21	140.0	..	W.	Cloudless.
22	145.0	..	N. W. or W.	Cloudless.
23	138.0	..	N. W. or W.	Cloudless.
24	Sunday.			
25	137.0	..	W.	Cloudless.
26	139.0	..	W. or S.	Cloudless till 10 A. M. scattered ☾ till 5 P. M. cloudless afterwards.
27	140.0	..	S.	Cloudless.
28	138.5	..	S. or E.	Cloudless till 5 A. M. scattered ☾ and ☾ till 7 P. M. cloudless afterwards.
29	135.0	..	S.	Cloudy.

☾ Cirri, ☾ Cirro-strati, ☾ Cumuli, ☾ Cumulo-strati, ☾ Nimbi, — Strati,
☾ Cirro-cumuli.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of February, 1856.*

MONTHLY RESULTS.

			Inches.
Mean height of the Barometer, for the month,	..	..	29.963
Max. height of the Barometer, occurred at 10 A. M. on the 19th,	..	..	30.143
Min. height of the Barometer, occurred at 4 P. M. on the 27th,	..	..	29.762
Extreme Range of the Barometer, during the month,	..	..	0.381

			°
Mean dry bulb Thermometer for the month,	..	..	72.7
Max. Temperature occurred at 3 P. M. on the 27th,	..	..	91.8
Min. Temperature, occurred at 6 A. M. on the 8th,	..	..	56.8
Extreme Range of the Temperature, during the month,	..	..	35.0

Mean wet bulb Thermometer for the month,	..	..	65.5
Mean dry bulb Thermometer above Mean wet bulb Thermometer,	..	..	7.2
Computed Mean dew point for the month,	..	..	61.9
Mean dry bulb Thermometer above computed Mean Dew point for the month,	10.8		
			Inches.
Mean elastic force of vapour for the month,	..	..	0.557
			Troy grains,
Mean weight of vapour for the month,	..	..	6.09
Additional weight of vapour required for complete saturation,	..	..	2.59
Mean degree of humidity for the month, complete saturation being unity.			0.70
			Inches.
Total amount of Rain during the month,	..	..	0.00

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of March, 1856.*

Latitude 22° 33' 1" North. Longitude 88° 20' 34" East.

Height of the Cistern of the Standard Barometer above the level of the Sea, 18.11 Feet.

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

Date.	Mean Height of the Barometer at 32° Fahr.	Range of the Barometer during the day.			Mean Dry Bulb Thermometer.	Range of the Tempera- ture during the day.		
		Max.	Min.	Diff.		Max.	Min.	Diff.
	Inches.	Inches.	Inches.	Inches.	°	°	°	°
1	30.017	30.076	29.963	0.113	79.4	86.8	75.2	11.6
2	<i>Sunday.</i>							
3	29.995	.080	.913	.167	79.7	88.8	73.6	15.2
4	.977	.042	.910	.132	80.3	88.4	73.8	14.6
5	.949	.030	.874	.156	81.7	91.1	75.4	15.7
6	.924	.002	.852	.150	81.3	90.6	74.6	16.0
7	.897	29.978	.825	.153	81.9	92.0	74.6	17.4
8	.878	.942	.799	.143	81.6	92.0	74.0	18.0
9	<i>Sunday.</i>							
10	.835	.906	.769	.137	80.5	89.8	74.8	15.0
11	.849	.918	.795	.123	79.9	88.2	73.6	14.6
12	.868	.935	.791	.144	79.2	87.2	71.7	15.5
13	.888	.965	.809	.156	79.5	88.9	72.2	16.7
14	.966	30.032	.896	.136	75.7	82.4	72.6	9.8
15	.960	.029	.883	.146	74.5	82.7	70.0	12.7
16	<i>Sunday.</i>							
17	.904	29.992	.847	.145	76.5	83.2	71.6	11.6
18	.877	.963	.799	.164	78.1	86.3	71.0	15.3
19	.778	.858	.644	.214	79.7	89.8	71.4	18.4
20	.742	29.853	.665	.188	74.9	83.8	67.6	16.2
21	<i>Good Friday.</i>							
22	.810	.888	.751	.137	80.8	89.6	73.0	16.6
23	<i>Sunday.</i>							
24	.708	.782	.645	.137	81.9	88.6	76.1	12.5
25	.674	.744	.619	.125	82.3	89.0	77.3	11.7
26	.736	.802	.675	.127	82.9	92.0	75.6	16.4
27	.794	.855	.744	.111	82.8	90.4	76.4	14.0
28	.836	.907	.776	.131	82.6	90.6	76.4	14.2
29	.830	.927	.753	.174	82.4	91.7	75.4	16.3
30	<i>Sunday.</i>							
31	.810	.886	.750	.136	84.7	95.6	75.5	20.1

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of March, 1856.*

Daily Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

Date.	Mean Wet Bulb Ther- mometer.	Dry Bulb above Wet.	Computed Dew Point.	Dry Bulb above Dew Point.	Mean Elastic force of Vapour.	Mean Weight of Vapour in a cubic foot of air.	Additional weight of Va- pour required for com- plete saturation.	Mean degree of Humi- dity, complete satura- tion being unity.
1	74.9	4.5	72.6	6.8	Inches. 0.790	T. gr. 8.54	T. gr. 2.08	0.80
2	<i>Sunday.</i>							
3	74.5	5.2	71.9	7.8	.773	.34	.38	.78
4	75.5	4.8	73.1	7.2	.803	.67	.24	.80
5	74.9	6.8	71.5	10.2	.763	.21	3.16	.72
6	75.5	5.8	72.6	8.7	.790	.50	2.74	.76
7	75.5	6.4	72.3	9.6	.783	.41	3.03	.74
8	73.9	7.7	70.0	11.6	.727	7.81	.53	.69
9	<i>Sunday.</i>							
10	75.5	5.0	73.0	7.5	.801	8.62	2.36	.79
11	74.6	5.3	71.9	8.0	.773	.34	.44	.77
12	73.6	5.6	70.8	8.4	.746	.07	.49	.76
13	73.2	6.3	70.0	9.5	.727	7.84	.82	.74
14	72.5	3.2	70.9	4.8	.748	8.15	1.36	.86
15	70.6	3.9	68.6	5.9	.695	7.58	.60	.83
16	<i>Sunday.</i>							
17	73.1	3.4	71.4	5.1	.761	8.27	.48	.85
18	73.4	4.7	71.0	7.1	.751	.13	2.09	.80
19	75.4	4.3	73.2	6.5	.806	.70	.02	.81
20	70.1	4.8	67.7	7.2	.674	7.36	1.92	.79
21	<i>Good Friday.</i>							
22	75.3	5.5	72.5	8.3	.787	8.49	2.58	.77
23	<i>Sunday.</i>							
24	77.9	4.0	75.9	6.0	.879	9.46	1.98	.83
25	78.0	4.3	75.8	6.5	.876	.41	2.17	.81
26	76.5	6.4	73.3	9.6	.809	8.66	3.13	.74
27	76.8	6.0	73.8	9.0	.822	.82	2.93	.75
28	76.5	6.1	73.4	9.2	.811	.71	.97	.75
29	76.1	6.3	72.9	9.5	.797	.56	3.05	.74
30	<i>Sunday.</i>							
31	78.3	6.4	75.1	9.6	.857	9.15	.27	.74

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of March, 1856.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon. (Continued.)

Hour.	Mean Height of the Barometer at 32° Fahr.	Range of the Barometer for each hour during the month.			Mean Dry Bulb Thermometer.	Range of the Temperature for each hour during the month.		
		Max.	Min.	Diff.		Max.	Min.	Diff.
	Inches.	Inches.	Inches.	Inches.	o	o	o	o
Mid- night.	} 29.870	30.025	29.693	0.332	76.1	80.0	69.8	10.2
1	.856	.019	.683	.336	75.6	79.0	68.6	10.4
2	.846	.010	.663	.347	75.4	78.8	69.6	9.2
3	.835	.001	.648	.353	74.9	78.0	69.9	8.1
4	.830	29.993	.633	.360	74.7	77.6	70.0	7.6
5	.846	.987	.645	.342	74.4	77.6	70.3	7.3
6	.864	30.012	.669	.343	74.2	77.3	70.4	6.9
7	.887	.042	.697	.345	74.6	77.9	70.4	7.5
8	.914	.056	.721	.335	77.1	80.5	72.2	8.3
9	.930	.077	.744	.333	79.8	83.6	74.6	9.0
10	.930	.080	.743	.337	82.5	86.6	77.1	9.5
11	.917	.071	.737	.334	84.4	89.2	77.6	11.6
Noon.	.891	.064	.712	.352	86.3	91.4	79.9	11.5
1	.862	.034	.678	.356	87.4	93.4	80.0	13.4
2	.830	.001	.663	.338	88.1	94.7	75.2	19.5
3	.809	29.984	.646	.338	88.2	95.6	74.3	21.3
4	.798	.967	.633	.334	87.4	95.5	73.6	21.9
5	.798	.976	.629	.347	85.8	94.2	73.8	20.4
6	.809	.980	.619	.361	83.6	91.6	74.2	17.4
7	.829	.997	.658	.339	81.3	87.6	73.8	13.8
8	.852	30.032	.667	.365	79.8	85.1	73.0	12.1
9	.874	.054	.660	.394	78.4	83.1	68.5	14.6
10	.877	.063	.653	.410	77.5	82.0	67.6	14.4
11	.885	.064	.684	.380	76.6	81.4	69.0	12.4

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of March, 1856.*

Hourly Means, &c. of the Observations and of the Hygrometrical elements
dependent thereon.

Hour.	Mean Wet Bulb Thermo- meter.	Dry Bulb above Wet.	Computed Dew Point.	Dry Bulb above Dew Point.	Mean Elastic force of Vapour.	Mean Weight of Vapour in a cubic foot of Air.	Additional weight of va- pour required for com- plete saturation.	Mean degree of Humidity, complete saturation be- ing unity.
	o	o	o	o	Inches.	T. gr.	T. gr.	
Mid- night.	73.7	2.4	72.5	3.6	0.787	8.56	1.07	0.89
1	73.5	2.1	72.4	3.2	.785	.55	0.93	.90
2	73.4	2.0	72.4	3.0	.785	.55	.88	.91
3	73.1	1.8	72.2	2.7	.781	.50	.78	.92
4	72.9	1.8	72.0	2.7	.776	.45	.78	.92
5	72.6	1.8	71.7	2.7	.768	.38	.77	.92
6	72.6	1.6	71.8	2.4	.771	.42	.67	.93
7	72.9	1.7	72.0	2.6	.776	.45	.75	.92
8	74.4	2.7	73.0	4.1	.801	.69	1.23	.88
9	75.7	4.1	73.6	6.2	.817	.82	.93	.82
10	76.3	6.2	73.2	9.3	.806	.66	2.98	.74
11	76.7	7.7	72.8	11.6	.795	.50	3.81	.69
Noon.	77.1	9.2	72.5	13.8	.787	.39	4.63	.64
1	77.1	10.3	71.9	15.5	.773	.21	5.24	.61
2	76.7	11.4	71.0	17.1	.751	7.97	.75	.58
3	76.5	11.7	70.6	17.6	.741	.86	.90	.57
4	76.4	11.0	70.9	16.5	.748	.95	.50	.59
5	76.3	9.5	71.5	14.3	.763	8.15	4.68	.64
6	75.9	7.7	72.0	11.6	.776	.30	3.73	.69
7	75.4	5.9	72.4	8.9	.785	.45	2.79	.75
8	75.2	4.6	72.9	6.9	.797	.61	.14	.80
9	74.6	3.8	72.7	5.7	.792	.58	1.73	.83
10	74.2	3.3	72.5	5.0	.787	.54	.50	.85
11	73.8	2.8	72.4	4.2	.785	.53	.24	.87

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office, Calcutta,
in the month of March, 1856.*

Solar radiation, Weather, &c.

Date.	Max. Solar radiation.	Rain.	Prevailing direction of the Wind.	General Aspect of the Sky.
	o	Inches.		
1	130.0	...	S. or S. E.	Cloudy till 8 A. M. scattered ☽i and ☾i [till 5 P. M. cloudless afterwards, [cloudless afterwards.
2	<i>Sunday.</i>			
3	132.3	...	S.	Cloudless till 6 A. M. cloudy till 4 P. M.
4	134.7	...	S.	Cloudless till 8 A. M. cloudy till 6 P. M. [cloudless afterwards.
5	142.7	...	S. or S. W.	Cloudless till 6 A. M. scattered ☾i till 6 [P. M. cloudless afterwards.
6	135.0	...	S.	Scattered clouds.
7	136.6	...	S.	Cloudless.
8	139.0	...	S.	Ditto.
9	<i>Sunday.</i>			
10	135.0	...	S.	[6 P. M. cloudless afterwards. Cloudless till 10 A. M. scattered ☽i till
11	138.7	...	S.	Cloudless till 8 A. M. scattered ☾i till 4 [P. M. cloudless afterwards.
12	132.0	...	S. or S. E.	Cloudless till 7 A. M. scattered ☾i till 6 [P. M. cloudless afterwards. [wards,
13	134.9	...	S. E. or S.	Cloudless till 8 A. M. scattered ☾i after-
14	...	0.16	E. or S. W.	Cloudless till 5 A. M. cloudy afterwards, also raining & thundering & lightning between 2 & 4 P. M.
15	126.6	0.41	S. E. or E.	Cloudy with drizzling before sunrise and [also rain at 4 P. M.
16	<i>Sunday.</i>	0.52		[rain between 5 & 6 P. M.
17	138.0	0.17	E. or N. E. or N. or W.	Cloudy or scattered ☾i also a shower of
18	130.0	...	W. or N. E. or S.	Clouds of various kinds.
19	135.0	0.47	S. or S. W.	Ditto ditto, (also a N. W. gale between 10h. 15m. & 10h. 47m. and rain after- wards.
20	133.5	0.50	S.	Cloudy with rain after 8 P. M.
21	<i>Good Friday.</i>			
22	142.0	...	S. E. or E. or S. W.	Cloudless till 3 A. M., cloudy or scattered ☾i till 5 P. M. cloudless till 9 P. M. [cloudy afterwards.
23	<i>Sunday.</i>			
24	124.0	...	S.	Cloudy. [scattered ☾i afterwards.
25	128.0	...	S.	Cloudy till 9 A. M. scattered ☽i till 4 P. M.
26	148.4	...	S. or S. E. or N. E.	Cloudless till 8 A. M. scattered ☾i till 7 [P. M. cloudless afterwards.
27	132.0	...	S. E. or S. W. or S.	Cloudless till 1 P. M. scattered ☾i after- [wards. [P. M. cloudless afterwards.
28	145.0	...	S. or S. W. or S.	Cloudless till 11 A. M. scattered ☾i till 4
29	147.0	...	S. or S. W.	Cloudless till 2 A. M. cloudy till 8 A. M. [cloudless afterwards.
30	<i>Sunday.</i>			
31	149.0	...	S.	Cloudless.

☽i Cirri, ☽i Cirro Strati, ☾i Cumuli, ☽i Cumulo Strati, ☽i Nimbi. —i Strati,
☽i Cirro Cumuli.

*Abstract of the Results of the Hourly Meteorological Observations
taken at the Surveyor General's Office Calcutta,
in the month of March, 1856.*

MONTHLY RESULTS.

			Inches.
Mean height of the Barometer for the month,	..	..	29.860
Max. height of the Barometer occurred at 10 A. M. on the 3d,	..	..	30.080
Min. height of the Barometer occurred at 6 P. M. on the 25th,	..	..	29.619
Extreme range of the Barometer during the month,	..	..	0.461

			°
Mean dry bulb Thermometer for the month,	..	..	80.2
Max. Temperature occurred at 3 P. M. on the 31st,	..	..	95.6
Min. Temperature occurred at 10 P. M. on the 20th,	..	..	67.6
Extreme range of the Temperature during the month,	..	..	28.0

Mean wet bulb Thermometer for the month,	..	..	74.9
Mean dry bulb Thermometer above mean wet bulb Thermometer,	..	..	5.3
Computed mean dew point for the month,	..	..	72.2
Mean dry bulb Thermometer above computed mean dew point,	..	..	8.0

			Inches.
Mean elastic force of vapour for the month,	..	..	0.781

			Troy grains.
Mean weight of vapour for the month,	..	..	8.41
Additional weight of vapour required for complete saturation,	..	..	2.47
Mean degree of humidity, for the month complete saturation being unity,	..	..	0.77

			Inches.
Rained 6 days.—Max. fall of rain during 24 hours,	..	..	0.52
Total amount of rain during the month,	..	..	2.23

Meteorological Register kept at the Office of the Secretary to Government, N. W. P., Agra, for the month of March, 1856.

Maximum pressure observed at 9.50 A. M.

Date.	Barometer.	Temperature.			Direction of Wind.	Quantity of Rain.	Aspect of the Sky.
		Of Mercury.	Of Air.	Wet Bulb.			
1	29.649	74.0	74.4	59.0	N. W.	..	Clear.
2	29.655	78.5	79.5	59.0	S. W.	..	Ditto.
3	29.623	75.9	77.0	60.0	N. W.	..	Ditto.
4	29.587	79.5	80.5	59.5	W.	..	Ditto.
5	29.581	81.5	82.2	61.5	N. W.	..	Ditto.
6	29.545	82.9	84.1	62.6	N. W.	..	Ditto.
7	29.505	82.9	84.0	64.0	S. W.	..	Ditto.
8	29.475	84.8	85.2	66.4	S. E.	..	Ditto.
9	29.405	85.5	86.6	68.5	S. E.	..	Ditto.
10	29.383	87.0	87.0	67.0	S. E.	..	Ditto.
11	29.413	87.5	89.0	69.9	W.	..	Ditto.
12	29.423	88.0	89.5	65.0	N. W.	..	Ditto.
13	29.443	85.0	85.0	71.0	S. E.	..	Ditto.
14	29.551	87.0	87.0	74.0	E.	..	Ditto.
15	29.569	82.3	82.0	67.5	E.	..	Ditto.
16	29.479	82.5	83.6	69.0	E.	..	W scattered.
17	29.505	84.0	85.5	68.5	E.	..	Clear.
18	29.475	85.1	85.9	69.3	S. E.	..	Ditto.
19	29.359	85.4	86.0	65.5	W.	..	Ditto.
20	29.325	80.0	80.2	60.5	N. W.	..	Ditto.
21	29.341	84.9	85.5	60.0	N. W.	..	Ditto.
22	29.455	86.0	87.0	60.0	E.	..	Scattered.
23	29.468	86.5	87.2	61.0	S. W.	..	Clear.
24	29.279	86.9	87.5	64.0	W.	..	Hazy.
25	29.357	79.3	80.0	55.0	W.	..	Ditto.
26	29.389	79.2	80.4	57.9	W.	..	Clear.
27	29.417	80.6	82.0	59.0	W.	..	Ditto.
28	29.413	83.0	85.5	62.0	W.	..	Ditto.
29	29.313	90.8	93.0	62.0	E.	..	Ditto.
30	29.375	85.0	85.7	64.0	W.	..	Ditto.
31	29.483	87.0	89.0	64.5	W.	..	Ditto.
Mean.	29.459	83.5	84.5	63.7			

Barometer Observations corrected for Capillarity only.

Symbols. { \ Cirus.
 { / Cirro strata.
 { > Cumuli.
 { ^ Cumulo strata.
 { ~ Nimbi or Nimbus.

Note.—The dry bulb and maximum Register do not agree, the former always reads more than the latter. The average difference is 1.6.

Meteorological Register kept at the Office of the Secretary to Government, N. W. P., Agra, for the month of March, 1856.

Observations at apparent Noon.

Date.	Barometer.	Temperature.			Direction of Wind.	Quantity of Rain.	Aspect of the Sky.
		Of Mercury.	Of Air.	Wet Bulb.			
1	29.639	80.5	82.5	59.5	N. W.	..	Clear.
2	29.629	81.9	82.2	60.0	S. W.	..	✓ scattered.
3	29.599	82.0	83.0	61.0	N. W.	..	Clear.
4	29.561	85.5	86.2	62.0	W.	..	Ditto.
5	29.543	86.8	86.7	63.8	N. W.	..	Ditto.
6	29.525	88.3	90.0	64.5	N. W.	..	Ditto.
7	29.483	88.7	88.5	65.0	N. W.	..	Ditto.
8	29.449	89.9	89.5	67.0	..	..	Ditto.
9	29.387	90.5	91.0	69.0	S. E.	..	Ditto.
10	29.363	91.2	91.9	68.5	S.	..	Ditto.
11	29.393	93.0	94.5	70.4	W.	..	Ditto.
12	29.403	95.2	96.4	64.4	N. W.	..	Ditto.
13	29.443	89.9	91.0	72.0	S. E.	..	Ditto.
14	29.525	90.5	90.6	74.5	E.	..	^ very few in zen.
15	29.521	86.5	87.4	71.0	S. E.	..	Clear.
16	29.455	85.0	85.8	69.9	E.	..	^ scattered.
17	29.473	87.5	88.9	69.0	S. E.	..	Clear.
18	29.427	90.8	90.9	69.5	S. W.	..	Ditto.
19	29.347	90.2	90.5	66.5	W.	..	Ditto.
20	29.293	84.0	84.4	61.3	N. W.	..	Ditto.
21	29.319	90.5	90.5	60.2	N. W.	..	Ditto.
22	29.407	88.0	91.3	61.5	E.	..	✓ scattered
23	29.451	89.7	89.9	62.5	S. W.	..	Clear.
24	29.259	90.5	90.9	64.2	W.	..	Hazy.
25	29.247	84.0	84.0	56.0	W.	..	Ditto.
26	29.381	85.2	85.6	57.5	W.	..	Clear.
27	29.403	88.1	88.8	59.2	W.	..	Ditto.
28	29.403	89.0	89.4	62.5	W.	..	Ditto.
29	29.281	94.4	95.2	65.5	E.	..	Ditto.
30	29.355	88.0	88.5	65.0	W.	..	Ditto.
31	29.473	90.5	91.6	64.5	W.	..	Ditto.
Mean.	29.435	88.2	88.9	64.4			

Meteorological Register kept at the Office of the Secretary to Government, N. W. P., Agra, for the month of March, 1856.

Minimum pressure observed at 4 P. M.

Date.	Barometer.	Temperature.			Maximum and minimum.			Aspect of the Sky.	Direction of Wind.	Quantity of Rain.
		Of Mercury.	Of Air.	Wet Bulb.	Maximum.	Minimum.	Mean.			
1	29.563	85.8	85.8	63.2	85.8	62.5	74.15	Clear.	W.	..
2	29.549	86.5	86.0	63.0	86.0	63.8	74.9	✓ scattered.	N. W.	..
3	29.521	88.5	89.0	64.5	88.6	64.9	76.75	Clear.	W.	..
4	29.493	94.0	93.4	63.0	93.5	66.5	80.0	Ditto.	N. W.	..
5	29.451	94.0	94.2	64.4	94.0	68.0	81.0	Ditto.	N. W.	..
6	29.437	95.5	95.8	66.5	95.5	69.5	82.5	Ditto.	N. W.	..
7	29.399	94.5	94.9	68.9	95.0	72.0	83.5	Ditto.	N. W.	..
8	29.355	94.8	94.9	70.5	94.5	68.5	81.5	Ditto.	S. W.	..
9	29.323	95.0	95.9	69.5	96.0	70.5	83.25	Ditto.	S. E.	..
10	29.293	99.0	98.6	68.5	99.5	75.9	87.7	Ditto.	W.	..
11	29.335	100.5	101.0	70.0	100.5	76.8	88.65	Ditto.	N. W.	..
12	29.335	101.0	101.0	66.5	100.5	75.0	87.75	Ditto.	N. W.	..
13	29.367	94.8	94.2	71.2	95.0	70.5	82.75	Ditto.	E.	..
14	29.425	93.7	93.5	71.5	93.5	70.5	82.0	Ditto.	S. E.	..
15	29.425	90.0	90.4	71.6	90.2	70.5	80.35	Ditto.	E.	..
16	29.379	89.5	90.5	71.5	90.5	72.0	81.25	✓ scattered.	S. E.	..
17	29.385	93.0	94.2	70.5	93.2	71.5	82.35	Clear.	S. W.	..
18	29.321	96.8	96.6	68.9	97.0	71.8	84.4	Ditto.	S. W.	..
19	29.251	93.4	93.0	67.0	93.5	76.0	84.75	Ditto.	N. W.	..
20	29.239	89.9	89.5	62.5	89.8	70.8	80.3	Ditto.	N. W.	..
21	29.267	95.5	95.5	62.5	95.5	69.5	82.5	Ditto.	N. W.	..
22	29.347	91.2	91.3	63.9	91.5	69.2	80.35	✓ scattered.	E.	..
23	29.405	97.2	97.0	65.0	97.5	74.5	86.0	Clear.	S. W.	..
24	29.197	93.4	93.4	66.5	94.0	74.5	84.25	Hazy.	W.	..
25	29.283	89.1	89.0	58.0	89.0	69.0	79.0	Clear.	W.	..
26	29.327	91.0	90.5	60.0	91.0	65.5	78.25	Ditto.	N. W.	..
27	29.337	93.0	93.0	62.6	92.5	66.0	79.25	Ditto.	W.	..
28	29.321	94.9	94.9	65.5	95.0	65.8	80.4	Ditto.	W.	..
29	29.207	96.0	95.8	68.0	97.0	69.5	83.25	✓ scattered.	W.	..
30	29.321	92.0	92.2	67.1	92.5	69.0	80.75	Clear.	W.	..
31	29.413	95.0	95.	68.	95.5	75.0	85.25	Ditto.	W.	..
Mean.	29.363	93.5	93.5	66.4	93.6	70.1	81.9			

Meteorological Register kept at the Office of the Secretary to Government, N. W. P., Agra, for the month of April, 1856.

Maximum pressure observed at 9.50 A. M.

Date.	Barometer.	Temperature.			Direction of Wind.	Quantity of Rain.	Aspect of the Sky.
		Of Mercury.	Of Air.	Wet Bulb.			
1	29.335	89.0	91.0	66.0	N. E.	..	Clear.
2	29.497	88.0	89.4	65.5	W.	..	Ditto.
3	29.393	88.1	90.0	66.0	W.	..	✓ few scattered.
4	29.455	85.5	85.0	66.4	W.	..	✓ all over.
5	29.491	87.8	88.0	64.0	N. W.	..	Clear.
6	29.363	94.5	95.7	71.0	N.	..	Ditto.
7	29.335	94.3	95.0	69.5	N.	..	Ditto.
8	29.253	95.2	96.2	70.0	N. W.	..	Ditto.
9	29.217	97.8	97.8	68.0	S. W.	..	Ditto.
10	29.343	90.2	90.8	64.0	W.	..	Ditto.
11	29.405	88.0	90.0	63.0	E.	..	Ditto.
12	29.377	89.0	91.0	60.8	N.	..	Ditto.
13	29.385	88.8	90.5	60.5	W.	..	Ditto.
14	29.305	88.5	89.5	61.6	W.	..	Ditto.
15	29.285	87.5	89.4	62.0	W.	..	✓ scattered in zen.
16	29.359	89.5	90.7	63.0	W.	..	Clear.
17	29.399	95.8	97.2	67.8	W.	..	Ditto.
18	29.373	100.0	100.5	70.8	W.	..	Ditto.
19	29.361	97.8	99.2	69.0	W.	..	Ditto.
20	29.401	96.5	97.8	70.8	W.	..	Ditto.
21	29.279	96.	97.0	67.0	W.	..	Ditto.
22	29.265	97.0	98.5	65.5	N. W.	..	Ditto.
23	29.307	97.0	98.4	66.5	W.	..	Ditto.
24	29.309	97.8	99.5	69.5	W.	..	✓ scattered.
25	29.315	100.0	101.9	69.0	N. E.	..	Clear.
26	29.293	96.0	95.8	70.4	E.	..	Ditto.
27	29.389	89.0	89.9	69.0	E.	..	Ditto.
28	29.439	88.9	88.5	73.5	N. E.	..	Ditto.
29	29.409	92.5	92.8	75.5	S. E.	..	Hazy.
30	29.337	96.0	96.8	74.5	S. E.	..	Clear.
Mean.	29.359	92.7	93.8	67.3			

Barometer Observations corrected for Capillarity only.

Symbols. {
 \ Cirrus.
 \ Cirro strata.
 > Cumuli.
 > Cumulo strati.
 \ Nimbi or Nimbus.

Note.—The dry bulb and maximum Register do not agree; the former always reads more than the latter. The average difference is 1.6.

Meteorological Register kept at the Office of the Secretary to Government, N. W. P., Agra, for the month of April, 1856.

Observations at apparent Noon.

Date.	Barometer.	Temperature.			Direction of Wind.	Quantity of Rain.	Aspect of the Sky.
		Of Mercury.	Of Air.	Wet Bulb.			
1	29.517	92.4	93.0	67.1	W.	..	Clear.
2	29.473	92.6	93.5	66.5	W.	..	Scattered in zen.
3	29.371	93.9	94.8	66.9	W.	..	~ scattered.
4	29.427	91.0	92.0	67.8	N. W.	..	Clear.
5	29.455	92.0	92.5	65.0	N. W.	..	Ditto.
6	29.305	99.0	99.5	71.5	N. W.	..	Ditto.
7	29.329	99.2	99.9	70.0	N.	..	Ditto.
8	29.205	100.0	101.	71.6	..	..	Ditto.
9	29.209	101.0	101.5	69.2	N. W.	..	Ditto.
10	29.323	96.9	97.5	63.5	W.	..	Ditto.
11	29.385	93.5	94.0	63.6	N.	..	Ditto.
12	29.355	93.7	95.8	63.0	N.	..	Ditto.
13	29.453	94.5	95.0	61.0	W.	..	Ditto.
14	29.279	93.0	94.0	62.5	W.	..	Ditto.
15	29.283	92.3	93.0	63.5	S. W.	..	~ scattered in zen.
16	29.353	95.5	96.0	64.8	W.	..	Clear.
17	29.377	99.8	101.0	69.0	W.	..	Ditto.
18	29.345	104.0	105.0	70.0	W.	..	Ditto.
19	29.331	103.0	103.5	69.9	N. W.	..	Ditto.
20	29.383	100.8	101.8	71.5	W.	..	Ditto.
21	29.259	99.8	100.4	67.2	W.	..	Ditto.
22	29.255	102.0	103.0	67.0	N. W.	..	Ditto.
23	29.291	102.0	103.5	67.6	W.	..	Ditto.
24	29.297	102.8	103.4	70.0	N. W.	..	~ scattered.
25	29.285	103.5	106.0	70.	N. E.	..	Clear.
26	29.277	99.0	99.5	75.5	E.	..	Ditto.
27	29.351	92.0	92.8	70.5	E.	..	Ditto.
28	29.399	91.5	92.0	73.0	E.	..	^ scattered in zen.
29	29.385	94.9	95.2	76.3	S. E.	..	Hazy.
30	29.305	98.9	98.9	76.4	S. E.	..	~ scattered.
Mean.	29.338	97.1	97.9	68.3			

Meteorological Register kept at the Office of the Secretary to Government, N. W. P., Agra, for the month of April, 1856.

Minimum pressure observed at 4 P. M.

Date.	Barometer.	Temperature.			Maximum and Minimum.			Aspect of the Sky.	Direction of Wind.	Quantity of Rain.
		Of Mercury.	Of Air.	Wet Bulb.	Maximum.	Minimum.	Mean.			
1	29.439	96.9	96.9	68.9	96.9	79.0	87.95	Clear.	W.	..
2	29.453	98.9	98.9	69.4	98.5	79.0	88.75	Ditto. [over.	W.	..
3	29.283	98.9	98.4	69.0	99.0	74.0	86.5	~ scattered all	W.	..
4	29.365	96.5	96.5	67.4	96.0	79.5	87.75	Clear.	N. W.	..
5	29.365	96.8	96.8	67.5	96.5	79.0	87.75	Ditto.	N. W.	..
6	29.217	102.5	102.5	73.1	102.0	76.0	94.0	Ditto.	N. W.	..
7	29.243	104.6	104.0	73.0	104.0	76.5	90.25	Ditto.	N. W.	..
8	29.125	106.9	106.6	70.0	106.5	76.0	91.25	Ditto.	N. W.	..
9	29.167	106.5	106.5	72.1	106.5	84.0	95.25	Ditto.	N. W.	..
10	29.267	100.9	100.1	65.0	100.5	78.5	89.5	Ditto.	W.	..
11	29.311	99.5	99.5	64.0	99.8	73.0	86.4	Ditto.	W.	..
12	29.275	98.9	99.6	64.7	99.2	70.8	85.0	Ditto.	N. W.	..
13	29.285	97.8	97.5	64.0	97.5	71.0	84.25	Ditto.	W.	..
14	29.205	98.5	98.5	61.6	98.0	73.0	85.5	Ditto.	W.	..
15	29.217	99.0	99.0	65.5	98.8	72.0	85.4	Ditto.	W.	..
16	29.295	101.5	102.4	67.0	102.2	72.0	87.1	Ditto.	W.	..
17	29.187	105.0	105.5	72.3	105.0	79.0	92.0	Ditto.	N. W.	..
18	29.263	108.5	109.5	70.5	109.2	82.5	95.85	Ditto.	W.	..
19	29.255	107.0	107.0	72.5	109.0	82.5	95.75	Ditto.	N. W.	..
20	29.223	110.6	110.5	73.0	110.0	81.0	95.5	Ditto.	W.	..
21	29.185	105.0	105.2	69.5	105.0	80.8	92.9	Ditto.	W.	..
22	29.179	106.8	106.8	69.0	106.5	81.8	94.2	Ditto.	N. W.	..
23	29.205	108.0	109.2	70.1	108.5	83.0	95.75	Ditto.	..	..
24	29.229	109.2	109.5	69.5	109.0	83.5	96.25	Ditto.	W.	..
25	29.175	108.9	108.5	73.6	108.5	83.5	96.0	Ditto.	N. E.	..
26	29.205	104.5	104.2	75.5	104.0	84.0	94.0	Ditto.	E.	..
27	29.285	95.8	94.9	71.6	95.5	79.0	87.25	Ditto.	E.	..
28	29.305	96.0	96.2	74.5	96.0	78.0	87.0	Ditto.	E.	..
29	29.295	100.5	100.5	80.0	100.0	83.0	91.5	Ditto.	S. E.	..
30	29.189	104.0	104.0	76.5	104.0	84.0	94.0	~ scattered.	S. E.	..
Mean.	29.256	102.4	102.1	70.1	102.4	78.6	90.5			

